Author Index to Volume 23

References with (L) are to Letters to the Editor

Achter, M. R. and R. Smoluchowski. Diffusion in grain boundaries—373(L)
Adams, Edmond, William M. Hubbard, and Albert M. Syeles. A new permanent magnet from powdered manganese bismuthide—1207
Aka, E. Z. (see Straumanis, M. E.)—330
Akeley, Edward (see Caplan, David)—774
Alexander, B. H. (see Balluffi, R. W.)—953
—— (see Balluffi, R. W.)—1237
Allen, William A., John S. Rinehart, and W. C. White. Phenomena associated with the flight of ultra-speed pellets. Part I. Ballistics—132
—— (see White, W. C.)—198
—— (see Rinehart, John S.)—297
Amakasu, K. Excess thermal noise due to current flow through Ba.Sr oxide coating—1330
Anderegg, J. W. (see Leonard, B. R., Jr.)—152(L)
Armstrong, H. L. (see Hughes, J. V.)—501
Aronin, Lewis R. On the kinetics of ordering in Ni_3Mn—642
Arthur, George R. A note on the approach of narrow band noise after a nonlinear device to a normal probability density—1143
Artman, Robert A. and Donald O. Thompson. Elastic constants of beta-brass single crystals—470
—— Temperature dependence of Young's modulus and internal friction of single crystals of beta-brass—475
Aspden, Harold. Eddy-currents in solid cylindrical cores having nonuniform permeability—523
Averbach, B. L. (see Warren, B. E.)—497(L)
—— (see Warren, B. E.)—1059(L)

Bailin, Louis L. (see Baños, Alfredo, Jr.)—688
Balluffi, R. W. Polygonization during diffusion—1407(L)
—— **and B. H. Alexander.** Dimensional changes normal to the direction of diffusion—953
—— **and B. H. Alexander.** Development of porosity during diffusion in substitutional solid solutions—1237
Baños, Alfredo, Jr., and Robert K. Golden. The electromagnetic field of a rotating uniformly magnetized sphere —1294
——, **David S. Saxon, and Louis L. Bailin.** Radiation characteristics of a turnstile antenna shielded by a section of a metallic tube closed at one end—688
Barkow, A. G. (see Moffett, J. C.)—1188(L)
Barnett, S. J. Method for determining magnetic moments and for measuring susceptibilities and permeabilities—975
Bauss, Herbert and R. F. Boyer. Random noise in dielectrics—802(L)
Beach, A. L. (see Lander, J. J.)—1305
Beck, Paul A. (see Chernock, Warren P.)—341
Beeman, W. W. (see Leonard, B. R., Jr.)—152(L)
Bekefi, G. Diffraction of electromagnetic waves by an aperture in an infinite screen—1403(L)
Bell, D. A. Physical entropy and information—372(L)
Bennett, F. D., W. C. Carter, and V. E. Bergdolt. Interferometric analysis of airflow about projectiles in free flight —453; errata—1412
—— (see Kahl, G. D.)—763
Benson, James M. Measurements of the physical properties of active nitrogen—757
Bergdolt, V. E. (see Bennett, F. D.)—453, 1412
Berry, V. J. and C. R. de Prima. An iterative method for the solution of eigenvalue problems—195
—— **and E. W. Hough.** Possible explanation of Briggs' limiting negative pressure data—931(L)
Biot, M. A. Propagation of elastic waves in a cylindrical bore containing a fluid—997
Birnbaum, George and S. K. Chatterjee. Dielectric constant of water vapor in the microwave region—220
Bishop, R. E. D. (see Goodier, J. N.)—124
Blair, G. W. Scott. Application of Nutting's equation to the viscoelastic behavior of certain polymeric systems—600(L)
Bloembergen, N. On the magnetic resonance absorption in conductors—1383
Bowen, Dwain, R. R. Eggleston, and R. H. Kropschot. Study of the annealing kinetics in cold-worked copper—630
Boyer, R. F. (see Bauss, Herbert)—802(L)
Brace, P. H. (see Okress, E. C.)—545, 1413
Bradford, E. B. Electron microscope study of plasticized latices—609
Brady, J. J., M. D. Pearson, and S. R. Peoples. Reflection of microwaves from metal-plate media—964
Branin, Franklin H., Jr. Determination of complex dielectric constants of absorptive liquids by microwave interferometry —990
Bratten, F. W. (see Neighbours, J. R.)—389
Brown, Alexander. Reply to Samuel Krimm's note—287(L)
Brown, L. Carlton, George L. Rogosa, and Guenter Schwarz. Angular shift of the transmitted x-ray beam near the Bragg angle—1054(L)
Brown, Sanborn C. and David J. Rose. Methods of measuring the properties of ionized gases at high frequencies. I. Measurements of Q—711
—— (see Rose, David J.)—719
—— (see Rose, David J.)—1028
Buchdahl, Rolf and Lawrence E. Nielsen. Applications of Nutting's equation to the viscoelastic behavior of certain polymeric systems—600(L)
Bueche, A. M. Physical theory of rubber reinforcement—154(L)
Bueche, F. Light scattering by pure polystyrene—1280(L)
Burket, R. E. (see Koh, P. K.)—698(L)
Burwell, J. T. and C. D. Strang. On the empirical law of adhesive wear—18
Byrne, J. (see Meissner, H. P.)—1170

Caplan, David and Edward Akeley. Axial motion of an electron in a constant wave velocity section of a linear accelerator—774
Carr, E. F. (see Chipman, R. A.)—613
Carter, W. C. (see Bennett, F. D.)—453, 1412
Casey, Joseph P., Jr. (see Lewis, Edward A.)—605
Caugherty, Betty (see Koh, P. K.)—427
—— (see Koh, P. K.)—698(L)
Chang, Lo-Ching. On diffusionless transformation in Au-Cd single crystals containing 47.5 atomic percent cadmium: Characteristics of single-interface transformation—725
Chatterjee, S. K. (see Birnbaum, George)—220
Ch'en, Shang-Yi and Wei-Cheng Li. Effect of gas pressure in the electric bulb on the polarity of the rectified current —228
Chernock, Warren P. and Paul A. Beck. Analysis of certain errors in the x-ray reflection method for the quantitative determination of preferred orientations—341
Chipman, R. A., E. F. Carr, N. A. Hoy, and M. Yurko. Radiation resistance of resonant transmission lines—613
Christian, S. M. (see Linder, E. G.)—1213
Clark, J. R. (see Weiss, R. J.)—1379
Cole, H. and B. E. Warren. Approximate elastic spectrum of β-brass from x-ray scattering—335

Author Index to Volume 23

References with (L) are to Letters to the Editor

Achter, M. R. and R. Smoluchowski. Diffusion in grain boundaries—373(L)
Adams, Edmond, William M. Hubbard, and Albert M. Syeles. A new permanent magnet from powdered manganese bismuthide—1207
Aka, E. Z. (see Straumanis, M. E.)—330
Akeley, Edward (see Caplan, David)—774
Alexander, B. H. (see Balluffi, R. W.)—953
—— (see Balluffi, R. W.)—1237
Allen, William A., John S. Rinehart, and W. C. White. Phenomena associated with the flight of ultra-speed pellets. Part I. Ballistics—132
—— (see White, W. C.)—198
—— (see Rinehart, John S.)—297
Amakasu, K. Excess thermal noise due to current flow through Ba.Sr oxide coating—1330
Anderegg, J. W. (see Leonard, B. R., Jr.)—152(L)
Armstrong, H. L. (see Hughes, J. V.)—501
Aronin, Lewis R. On the kinetics of ordering in Ni_3Mn—642
Arthur, George R. A note on the approach of narrow band noise after a nonlinear device to a normal probability density—1143
Artman, Robert A. and Donald O. Thompson. Elastic constants of beta-brass single crystals—470
—— Temperature dependence of Young's modulus and internal friction of single crystals of beta-brass—475
Aspden, Harold. Eddy-currents in solid cylindrical cores having nonuniform permeability—523
Averbach, B. L. (see Warren, B. E.)—497(L)
—— (see Warren, B. E.)—1059(L)

Bailin, Louis L. (see Baños, Alfredo, Jr.)—688
Balluffi, R. W. Polygonization during diffusion—1407(L)
—— **and B. H. Alexander.** Dimensional changes normal to the direction of diffusion—953
—— **and B. H. Alexander.** Development of porosity during diffusion in substitutional solid solutions—1237
Baños, Alfredo, Jr., and Robert K. Golden. The electromagnetic field of a rotating uniformly magnetized sphere —1294
——, **David S. Saxon, and Louis L. Bailin.** Radiation characteristics of a turnstile antenna shielded by a section of a metallic tube closed at one end—688
Barkow, A. G. (see Moffett, J. C.)—1188(L)
Barnett, S. J. Method for determining magnetic moments and for measuring susceptibilities and permeabilities—975
Bauss, Herbert and R. F. Boyer. Random noise in dielectrics—802(L)
Beach, A. L. (see Lander, J. J.)—1305
Beck, Paul A. (see Chernock, Warren P.)—341
Beeman, W. W. (see Leonard, B. R., Jr.)—152(L)
Bekefi, G. Diffraction of electromagnetic waves by an aperture in an infinite screen—1403(L)
Bell, D. A. Physical entropy and information—372(L)
Bennett, F. D., W. C. Carter, and V. E. Bergdolt. Interferometric analysis of airflow about projectiles in free flight —453; errata—1412
—— (see Kahl, G. D.)—763
Benson, James M. Measurements of the physical properties of active nitrogen—757
Bergdolt, V. E. (see Bennett, F. D.)—453, 1412
Berry, V. J. and C. R. de Prima. An iterative method for the solution of eigenvalue problems—195
—— **and E. W. Hough.** Possible explanation of Briggs' limiting negative pressure data—931(L)
Biot, M. A. Propagation of elastic waves in a cylindrical bore containing a fluid—997
Birnbaum, George and S. K. Chatterjee. Dielectric constant of water vapor in the microwave region—220
Bishop, R. E. D. (see Goodier, J. N.)—124
Blair, G. W. Scott. Application of Nutting's equation to the viscoelastic behavior of certain polymeric systems—600(L)
Bloembergen, N. On the magnetic resonance absorption in conductors—1383
Bowen, Dwain, R. R. Eggleston, and R. H. Kropschot. Study of the annealing kinetics in cold-worked copper—630
Boyer, R. F. (see Bauss, Herbert)—802(L)
Brace, P. H. (see Okress, E. C.)—545, 1413
Bradford, E. B. Electron microscope study of plasticized latices—609
Brady, J. J., M. D. Pearson, and S. R. Peoples. Reflection of microwaves from metal-plate media—964
Branin, Franklin H., Jr. Determination of complex dielectric constants of absorptive liquids by microwave interferometry —990
Bratten, F. W. (see Neighbours, J. R.)—389
Brown, Alexander. Reply to Samuel Krimm's note—287(L)
Brown, L. Carlton, George L. Rogosa, and Guenter Schwarz. Angular shift of the transmitted x-ray beam near the Bragg angle—1054(L)
Brown, Sanborn C. and David J. Rose. Methods of measuring the properties of ionized gases at high frequencies. I. Measurements of Q—711
—— (see Rose, David J.)—719
—— (see Rose, David J.)—1028
Buchdahl, Rolf and Lawrence E. Nielsen. Applications of Nutting's equation to the viscoelastic behavior of certain polymeric systems—600(L)
Bueche, A. M. Physical theory of rubber reinforcement—154(L)
Bueche, F. Light scattering by pure polystyrene—1280(L)
Burket, R. E. (see Koh, P. K.)—698(L)
Burwell, J. T. and C. D. Strang. On the empirical law of adhesive wear—18
Byrne, J. (see Meissner, H. P.)—1170

Caplan, David and Edward Akeley. Axial motion of an electron in a constant wave velocity section of a linear accelerator—774
Carr, E. F. (see Chipman, R. A.)—613
Carter, W. C. (see Bennett, F. D.)—453, 1412
Casey, Joseph P., Jr. (see Lewis, Edward A.)—605
Caugherty, Betty (see Koh, P. K.)—427
—— (see Koh, P. K.)—698(L)
Chang, Lo-Ching. On diffusionless transformation in Au-Cd single crystals containing 47.5 atomic percent cadmium: Characteristics of single-interface transformation—725
Chatterjee, S. K. (see Birnbaum, George)—220
Ch'en, Shang-Yi and Wei-Cheng Li. Effect of gas pressure in the electric bulb on the polarity of the rectified current —228
Chernock, Warren P. and Paul A. Beck. Analysis of certain errors in the x-ray reflection method for the quantitative determination of preferred orientations—341
Chipman, R. A., E. F. Carr, N. A. Hoy, and M. Yurko. Radiation resistance of resonant transmission lines—613
Christian, S. M. (see Linder, E. G.)—1213
Clark, J. R. (see Weiss, R. J.)—1379
Cole, H. and B. E. Warren. Approximate elastic spectrum of β-brass from x-ray scattering—335

Collins, R. E. Determination of the transverse permeabilities of large core samples from petroleum reservoirs—681
Comenetz, G. (see Okress, E. C.)—545, 1413
Copeland, Paul L. and Delbert N. Eggenberger. Electric field in diodes and the transit time of electrons as functions of current—280
Coppola, P. P. (see Hughes, R. C.)—635
—— (see Hughes, Ray C.)—1261
Corliss, L. (see Weiss, R. J.)—1379
Corrsin, Stanley. Heat transfer in isotropic turbulence—113
Craig, D. J. (see Czyzak, S. J.)—932(L)
Cranberg, Lawrence. Initiation of electrical breakdown in vacuum—518
Cumming, W. A. Dielectric properties of ice and snow at 3.2 centimeters—768
Cunningham, W. J. Equivalences for the analysis of circuits with small nonlinearities—653
—— Incandescent lamp bulbs in voltage stabilizers—658
Czyzak, S. J., D. J. Craig, and C. E. McCain. Single synthetic cadmium sulfide crystals—932(L)

Danielson, Warren E. (see Shenfil, Leon)—854
——, **Leon Shenfil, and Jesse W. M. DuMond.** Latex particle size determination using diffraction peaks obtained with the point focusing x-ray monochromator—860
Das Gupta, Sushil Chandra. Note on Love waves in a homogeneous crust laid upon heterogeneous medium—1276(L)
Davenport, W. B., Jr., R. A. Johnson, and D. Middleton. Statistical errors in measurements on random time functions—377
Davies, Richard W. Turbulent diffusion and erosion—941
Davis, B. I. (see Marx, J. W.)—1354
Davis, R. C. On the theory of prediction of nonstationary stochastic processes—1047
Dawson, M. H. Diffusion in grain boundaries—373(L)
Demos, P. T., A. F. Kip, and J. C. Slater. M.I.T. linear electron accelerator—53
de Haas, Newman (see Elder, Fred Kingsley, Jr.)—1065
de Prima, C. R. (see Berry, V. J.)—195
Dickey, Frank R., Jr. Contribution to the theory of impulse breakdown—1336
Dienes, G. J. Mechanism for self-diffusion in graphite—1194
—— (see Feldman, M. H.)—1200
Domotor, P. (see Fowler, C. M.)—415
Doolittle, Arthur K. Studies in Newtonian flow. III. The dependence of the viscosity of liquids on molecular weight and free space (in homologous series)—236
—— Studies in Newtonian flow. IV. Viscosity *vs* molecular weight in liquids: Viscosity *vs* concentration in polymer solutions—418
Drickamer, H. G. (see Reinsch, A. J.)—152(L)
Duff, Russell E. The interaction of plane shock waves and rough surfaces—1373
DuMond, Jesse W. M. (see Shenfil, Leon)—854
—— (see Danielson, Warren E.)—860
Dunbar, Allen S. On the theory of antenna beam shaping—847

Edmonson, R. B. (see Olsen, H. L.)—1157
Eggenberger, Delbert N. (see Copeland, Paul L.)—280
Eggleston, R. R. (see Bowen, Dwain)—630
—— Cold-work studies on copper at low temperatures—1400(L)
Eichelberger, R. J. (see Pugh, Emerson M.)—532
—— **and Emerson M. Pugh.** Experimental verification of the theory of jet formation by charges with lined conical cavities—537
Elder, F. K., Jr., and N. de Haas. Experimental study of the formation of a vortex ring at the open end of a cylindrical shock tube—1065
Elliott, Robert S. Some limitations on the maximum frequency of coherent oscillations—812
Ellis, S. G. Specimen charging in the electron microscope and some observations on the size of polystyrene latex particles—728
—— Effect of accelerating voltage and specimen morphology on electron diffraction patterns—1024
Ells, C. E. and G. D. Scott. Structure of sputtered silver films—31
Estermann, I. and J. E. Zimmerman. Heat conduction in alloys at low temperatures—578
Evans, H. T. (see Hughes, R. C.)—635
Evans, Howard T., Jr. X-ray absorption corrections for single crystals—663

Fairbairn, Harold W. (see Hurley, Patrick M.)—1408(L)
Faris, F. E., L. Green, Jr., and C. A. Smith. Thermal dependence of the elastic moduli of polycrystalline graphite—89
Faro, I., T. R. Small, and F. K. Hill. Supersaturation of nitrogen in a hypersonic wind tunnel—40
Fast, J. D. Allotropic transformation of hafnium and a tentative equilibrium diagram of the system zirconium-hafnium—350
Fein, A. E. and Charles S. Smith. The polarization of acoustic waves in cubic crystals—1212
Feldman, M. H., W. V. Goeddel, G. J. Dienes, and W. Gossen. Studies of self-diffusion in graphite using C-14 tracer—1200
Feng, I.-Ming. Metal transfer and wear—1011
Fettis, Henry E. Note on an integral in the theory of waveguide-fed slots—1409(L)
Fisher, R. M. Direct printing of shadowed electron micrographs—153(L)
Fisher, Thomas F. and C. E. Weber. Cathodic sputtering for micro-diffusion studies—181
Flanagan, R. and R. Smoluchowski. Grain boundary diffusion of zinc in copper—785
Foner, S. (see Pugh, E. M.)—48
Fowler, C. M. and P. Domotor. Focusing in a beta-ray spectrometer with tilted sources—415
Frank, Ernest. Electric potential produced by two point current sources in a homogeneous conducting sphere—1225
Freeman, J. J. Admittance of a diode with a retarding field—743
—— On the relation between the conductance and the noise power spectrum of certain electronic streams—1223
Frerichs, Rudolf. Receiver of high effective absorption for penetrating radiation—697(L)
Fromm, K. N. (see Miller, T.)—373(L)

Gayhart, E. L. (see Olsen, H. L.)—1157
Geissler, A. H. and D. L. Martin. New superlattice in Co-Pt alloys—375(L)
Germer, L. H. and J. L. Smith. Arcing at electrical contacts on closure. Part III. Development of an arc—553
Gibbons, J. J. and Robert L. Schrag. A method of solving the wave equation in a region of rapidly varying complex refractive index—1139
Goeddel, W. V. (see Feldman, M. H.)—1200
Goertz, Matilda (see Williams, H. J.)—316
Golden, Robert K. (see Baños, Alfredo, Jr.)—1294
Goodier, J. N. and R. E. D. Bishop. Note on critical reflections of elastic waves at free surfaces—124
—— Comments on Jardetzky's remark on critical reflections of elastic waves at free surfaces—1280(L)
Gorter, E. W. (see Stuyts, A. L.)—1282(L)
Gossen, W. (see Feldman, M. H.)—1200

Grattidge, Walter and Harold John. The electronic properties of barium sulfide—1145
Green, L., Jr. (see Faris, F. E.)—89
Greenwood, Allan N. The mechanisms of the ring discharge in negative point-to-plane corona—1316
Grimes, D. M. and Sam Legvold. Measurement of the dc resistance of selenium and copper oxide rectifiers below room temperature—312
Groetzinger, Gerhart (see Schwed, Philip)—234
—— (see Wiener, Bernard)—441
Grube, William L. (see Watson, John H. L.)—793
Gruenberg, Harry. Theory of wave-guide-fed slots radiating into parallel-plate regions—733
Gunn, Ross. Vertical shaft for the production of thick artificial clouds and for the study of precipitation mechanics—1
Gutmann, F. and L. M. Simmons. Temperature dependence of the viscosity of liquids—977

Halteman, Eber K. Electron diffraction evidence for the existence of microstress in evaporated metal films—150
Hansen, S. (see Smith, H. M.)—1054(L)
Harris, Lawrence A. Instabilities in the smooth-anode cylinderical magnetron—562
Hashitsume, Natsuki (see Isihara, Akira)—308
Hastings, J. (see Weiss, R. J.)—1379
Hay, R. G. (see Kehl, W. L.)—212
Heidenreich, R. D. and E. A. Nesbitt. Physical structure and magnetic anisotropy of Alnico 5. Part I—352
—— (see Nesbitt, E. A.)—366
Heine-Geldern, R. v. (see Pugh, E. M.)—48
Hensley, Eugene B. The electrical properties of porous semiconductors—1122
Hersh, Herbert N. Kirkendall effect in alloy systems—1055(L)
Hibi, Tadatosi. On the metallic shadow-casting using a nozzle system—957
Higgins, Thomas J. (see Swenson, George W., Jr.)—126
Hill, F. K. (see Faro, I.)—40
Hoffman, R. E. and D. Turnbull. Effect of impurities on the self-diffusion of silver—1409(L)
Hogan, C. L. and R. B. Sawyer. Thermal conductivity of metals at high temperature—177
—— **and R. B. Sawyer.** Erratum: The thermal conductivity of metals at high temperature—600
Hok, Gunnar. Statistical approach to the space-charge distribution in a cut-off magnetron—983
Holden, A. N. and F. W. Kunz. Note on the strain aging of iron single crystals—799(L)
Holm, Else. Contribution to the theory of the silicon carbide contact—509
Holm, R. J., D. Weber, and S. S. Penner. Emissivity for CO_2 at elevated pressures—1283(L)
Hopkins, E. G. Self-heating thermionic vacuum tubes—1055(L)
Horak, Frank A. Correlation of dc and microsecond pulsed emission from oxide coated cathodes—346
Hough, E. W. (see Berry, V. J.)—931(L)
Hoy, N. A. (see Chipman, R. A.)—613
Hsiao, C. C. Effect of orientation on the ultimate strength of linear high polymers—1189(L)
Hubbard, William M. (see Adams, Edmond)—1207
Hughes, J. V. and H. L. Armstrong. Dielectric constant of dry air—501
Hughes, R. C., P. P. Coppola, and H. T. Evans. Chemical reactions in barium oxide on tungsten emitters—635
—— **and P. P. Coppola.** Bariated tungsten emitters—1261
Hurley, Patrick M. and Harold W. Fairbairn. Alpha-radiation damage in zircon—1408(L)
Huth, J. H. Thermal stresses in a partially clamped half-plane—1234

Ibrahim, Ali A. and A. M. Kabiel. Theory of an oscillating cylinder viscometer. Part I—754
Ibrahim, Ali A. K. and A. M. Kabiel. On the oscillating cylinder viscometer. I—1190(L)
Ikegawa, Tatsuo (see Okada, Jun)—1282(L)
Ince, C. R. S. Atomic clocks and frequency stabilization—1408(L)
Isihara, Akira, Natsuki Hashitsume, and Masao Tatibana. Statistical theory of rubber-like elasticity. V. The stress birefringence—308
Ivey, Henry F. Space charge and transit time considerations in planar diodes for relativistic velocities—208
—— Space-charge-limited currents between inclined plane electrodes—240
—— Effect of filament voltage on the plate current of a diode—1254

Jakob, Max. Attempt to explain a discrepancy in observations of the heat transfer between a vertical surface and a fluidized bed of particles—1056(L)
Jardetzky, W. S. Remark on critical reflections of elastic waves at free surfaces—1279(L)
Jaynes, Edwin T. The concept and measurement of impedance in periodically loaded wave guides—1077
Jerrard, R. P. (see Poritsky, H.)—928
Jessup, R. S. Condition for the creeping of a liquid past a mercury seal—543
John, Harold (see Grattidge, Walter)—1145
Johnson, R. A. (see Davenport, W. B., Jr.)—377
Johnson, R. D. and A. B. Martin. The effect of cyclotron bombardment on self-diffusion in silver—1245
Johnson, S. J. and T. F. Rogers. Magnetically induced ultrasonic velocity changes in polycrystalline nickel—574
Jones, H. Change of the elastic constants of β-brass with composition—697(L)
Jones, T. B. (see Skolnik, Merrill)—643

Kabiel, A. M. (see Ibrahim, Ali A.)—754
—— (see Ibrahim, Ali A. K.)—1190(L)
Kaesberg, Paul (see Leonard, B. R., Jr.)—152(L)
Kahl, G. D. and F. D. Bennett. Experimental verification of source size theory for the Mach-Zehnder interferometer—763
Kampmeyer, Preston M. Temperature dependence of viscosity for water and mercury—99
Kantrowitz, Arthur (see Resler, E. L.)—1390
Karush, William. Steady-state heat flow problem for a quarter infinite solid—492
—— **and Gale Young.** Temperature rise in a heat-producing solid behind a surface defect—1191
Kaufman, M. (see Rosenthal, D.)—600(L)
Kauzmann, W. (see Slifkin, L.)—746
Kehl, W. L., R. G. Hay, and D. Wahl. Structure of tetragonal tungsten trioxide—212
Keller, Joseph B. Diffraction of a shock or an electromagnetic pulse by a right-angled wedge—1267
Kelly, J. C. R. (see Okress, E. C.)—545, 1413
Kern, H. E. (see Lander, J. J.)—1305
King, D. D. Dielectric image line—699(L)
King, Ronold. Theory of electrically short transmitting and receiving antennas—1174
Kip, A. F. (see Demos, P. T.)—53
Kirschbaum, H. S. Comments on "A mathematical analysis of parallel-connected magnetic amplifiers with resistive loads"—1278(L)
Kirshner, J. M. and D. S. Toffolo. Drift velocity of electrons in argon and argon mixtures—594
Knudsen, H. Lottrup. Radiation field of a square, helical beam antenna—483

Kodis, Ralph D. Diffraction measurements at 1.25 centimeters—249
Koh, P. K. and Betty Caugherty. Metallurgical applications of x-ray fluorescent analysis—427
——, **B. Caugherty, and R. E. Burket.** Intensity calculation for determining weight percentage in a binary alloy by x-ray fluorescent analysis—698(L)
Koski, W. S., F. A. Lucy, R. G. Shreffler, and F. J. Willig. Fast jets from collapsing cylinders—1300
Krieger, Irvin M. and Samuel H. Maron. Direct determination of the flow curves of non-Newtonian fluids—147; errata—1412
Krimm, Samuel. Orientation of crystallites in stretched polyethylene—287(L)
Kropschot, R. H. (see Bowen, Dwain)—630
Kunz, F. W. (see Holden, A. N.)—799(L)

Labrum, N. R. Some experiments on centimeter-wavelength scattering by small obstacles—1320
—— The scattering of radio waves by meteorological particles—1324
Lad, Robert A. Crack formation on sodium chloride single crystal surfaces—800(L)
Landauer, Rolf. Electrical resistance of binary metallic mixtures—779
Lander, J. J., H. E. Kern, and A. L. Beach. Solubility and diffusion coefficient of carbon in nickel: Reaction rates of nickel-carbon alloys with barium oxide—1305
Lauer, Eugene J. Mechanisms of positive and negative corona in hydrogen and argon between coaxial cylindrical electrodes over an extended pressure range—300
Lawrence, W. L. (see Mayburg, S.)—1006
Lawson, W. D. Oxygen-free single crystals of lead telluride, selenide, and sulfide—495
Lazarus, D. (see Slifkin, L.)—1032
—— (see Slifkin, L.)—1405(L)
Legvold, Sam (see Grimes, D. M.)—312
Leonard, B. R., Jr., J. W. Anderegg, Paul Kaesberg, and W. W. Beeman. Size of latex particles by x-ray scattering—152(L)
Leverton, W. F. and W. G. Shepherd. Use of radioactive isotopes in a study of evaporation from thermionic cathodes—787
Levy, M. On the redundant information supplied in practical applications by the time and frequency-phase responses of a system—801(L)
Levy, S. L. (see Ying, C. F.)—1339
Lewis, Edward A. and Joseph P. Casey, Jr. Electromagnetic reflection and transmission by gratings of resistive wires—605
Li, Wei-Cheng (see Ch'en, Shang-Yi)—228
Lin, Shao-Chi (see Resler, E. L.)—1390
Lindemann, W. W. and A. van der Ziel. On the flicker noise caused by an interface layer—1410(L)
Linder, E. G. and S. M. Christian. The use of radioactive material for the generation of high voltage—1213
Lucy, F. A. (see Koski, W. S.)—1300
Lunquist, George A. Shock wave formation in a shock tube—374(L)
Lyons, W. James. Distribution of activation energies for viscoelastic deformation—287(L)

MacDonald, D. K. C. Information theory and its application to taxonomy—529
Maier, L. C., Jr., and J. C. Slater. Field strength measurements in resonant cavities—68
—— **and J. C. Slater.** Determination of field strength in a linear accelerator cavity—78
Malter, L. (see Ramberg, E. G.)—1333
Mapleton, Robert A. Elastic wave propagation in solid media—1346
Markovitz, Hershel. A property of Bessel functions and its application to the theory of two rheometers—1070
Maron, Samuel H. (see Krieger, Irvin M.)—147, 1412
——, **Carl Moore, and Allen S. Powell.** Electron microscopy of synthetic latices—900
Martin, A. B. (see Johnson, R. D.)—1245
Martin, D. L. (see Geissler, A. H.)—375(L)
Martin, James (see Wahlin, H. B.)—107
Marx, J. W. Amplitude pulsations in the vibrational strain pattern of metal single crystals—1406(L)
—— **and B. I. Davis.** Film boiling termination mechanism—1354
Matheson, R. M. and L. S. Nergaard. Decay and recovery of the pulsed emission of oxide-coated cathodes—869
May, Albert. Vertical entry of missiles into water—1362
Mayburg, S. and W. L. Lawrence. Conductivity change in polyethylene during γ-irradiation—1006
McCain, C. E. (see Czyzak, S. J.)—932(L)
McFadden, J. A. Initial behavior of a spherical blast—1269
McGuire, J. C. (see Sidhu, S. S.)—1257
McKinney, C. M. Experimental investigation of the dielectric rod antenna of circular cross section excited in rotationally symmetrical modes—11
Medicus, Gustav (see Wehner, Gottfried)—1035
Meissner, H. P. and J. Bryne. Bonding of thin films—1170
Middleton, D. (see Davenport, W. B., Jr.)—377
Miles, John W. Reduction of three-dimensional electromagnetic problems—372(L)
—— Heat conduction along an exponential bar—372(L)
—— On solutions to the wave equation in hyperbolic space—1400(L)
Miller, Kenneth S. (see Zadeh, Lotfi A.)—223
Miller, P. H., Jr. and B. R. Russell. Effect of internal strains on linear expansion, x-ray lattice constant, and density of crystals—1163
Miller, T. and K. N. Fromm. Radiofrequency field quenching of ultraviolet excited phosphors—373(L)
Miller, Theodore. Radiofrequency field quenching of ultra violet excited phosphors—1289
Mindlin, Raymond L. Forced thickness-shear and flexural vibrations of piezoelectric crystal plates—83
Moffett, J. C., G. Ryge, and A. G. Barkow. Phase changes in silver—tin amalgams—1188(L)
Monk, G. W. Viscous energy dissipated during the atomization of a liquid—288(L)
—— A high vacuum flow analogy—799(L)
Montroll, Elliott W. and Gordon F. Newell. Unsteady-state separation performance of cascades. I—184
Moore, Carl (see Maron, Samuel H.)—900
Morrison, H. L. and F. T. Rogers, Jr. Significance of flow-patterns for initial convection in porous media—1058(L)
Morse, Philip M. Operations research, what is it?—165
Murray, Raymond L. Mass-spectrographic study of ionic reactions in hydrogen—6
Mutschler, E. C. (see Pugh, E. M.)—48

Nagamatsu, H. T. (see Willmarth, W. S.)—1095
Namiki, Mikio and Hiroshi Takahashi. Some variational principles for problems in transmission lines—1056(L)
Narita, Shin-ichiro. Thermionic emission and electrical conductivity of oxide-coated cathodes—599(L)
Neighbours, J. R., F. W. Bratten, and Charles S. Smith. Elastic constants of nickel—389
Nergaard, L. S. (see Matheson, R. M.)—869
Nesbitt, E. A. (see Heidenreich, R. D.)—352
—— **and R. D. Heidenreich.** Physical structure and magnetic anisotropy of Alnico 5. Part II—366

Neugebauer, Hans E. J. A new method of solving diffraction problems—1406(L)
Newell, Gordon F. (see Montroll, Elliott W.)—184
Nielsen, Lawrence E. (see Buchdahl, Rolf)—600(L)
Nolle, A. W. and P. W. Sieck. Longitudinal and transverse ultrasonic waves in a synthetic rubber—888
Norton, Kenneth A., Edna L. Schultz, and Helen Yarbrough. Probability distribution of the phase of the resultant vector sum of a constant vector plus a Rayleigh distributed vector—137

O'Gorman, V. (see Redheffer, R. M.)—505, 1413
Okada, Jun and Tatsuo Ikegawa. Electrical resistivity of artificial graphite—1282(L)
Okress, E. C., D. M. Wroughton, G. Comenetz, P. H. Brace, and J. C. R. Kelly. Electromagnetic levitation of solid and molten metals—545; errata, 1413
Olsen, H. L., R. B. Edmonson, and E. L. Gayhart. Microchronometric Schlieren study of gaseous expansion from an electric spark—1157
Ostrander, M. H. (see Penner, S. S.)—256
Otley, K. O. and W. A. Weyl. Blue glass which fades upon nuclear radiation—499(L)

Page, Chester H. Instantaneous power spectra—103
Palmer, L. S. Radiation or diffraction patterns close to receiving antennas—289(L)
Papoulis, A. On the accumulation of errors in the numerical solution of differential equations—173
Parzen, Philip. Space-charge-wave propagation in a cylindrical electron beam of finite lateral extension—215
—— Effect of thermal-velocity spread on the noise figure in traveling-wave tubes—394
Paterson, M. S. Effects of lattice imperfections on x-ray line broadening—499(L)
—— X-ray diffraction by face-centered cubic crystals with deformation faults—805
Peach, Milton O. Mechanism of growth of whiskers on cadmium—1401(L)
Pearson, John and John S. Rinehart. Deformation and fracturing of thick-walled steel cylinders under explosive attack—434
—— (see Rinehart, John S.)—685
Pearson, M. D. (see Brady, J. J.)—964
Penner, S. S., M. H. Ostrander, and H. S. Tsien. Emission of radiation from diatomic gases. III. Numerical emissivity calculations for carbon monoxide for low optical densities at 300°K and atmospheric pressure—256
—— Emission of radiation from diatomic gases. IV. Emissivity calculations for CO and HCl for nonoverlapping rotational lines as a function of temperature and optical density—825
—— (see Holm, R. J.)—1283(L)
Peoples, S. R. (see Brady, J. J.)—964
Perls, Thomas A. Electrical noise from instrument cables subjected to shock and vibration—674
Pipes, Louis A. Reversion method for solving nonlinear differential equations—202
—— Mathematical analysis of parallel-connected magnetic amplifiers with resistive loads—625
—— Mathematical analysis of a dielectric amplifier—818
—— Comments on Kirschbaum's Letter "A mathematical analysis of parallel-connected magnetic amplifiers with resistive loads"—1279(L)
—— A mathematical analysis of an inductively loaded parallel-connected magnetic amplifier—1358
Plass, Gilbert N. Thermal neutron diffusion length in a heterogeneous pile—621
Plesset, M. S. and S. A. Zwick. Nonsteady heat diffusion problem with spherical symmetry—95
Poritsky, H. and R. P. Jerrard. Integrable case of electron motion in electric and magnetic field—928
Powell, Allen S. (see Maron, Samuel H.)—900
Price, E. W. Steady-state one-dimensional flow in rocket motors—142
Pugh, E. M., R. v. Heine-Geldern, S. Foner, and E. C. Mutschler. Glass cracking caused by high explosives—48
Pugh, Emerson M., R. J. Eichelberger, and Norman Rostoker. Theory of jet formation by charges with lined conical cavities—532
—— (see Eichelberger, R. J.)—537

Ramachandran, G. N. Transmission of x-rays at settings near the Bragg angle—500(L)
Ramberg, E. G. and L. Malter. Potential distribution for space-charge limited current between a plane accelerating grid and parallel anode—1333
Ranz, W. E. (see Saxton, R. L.)—917
Rathenau, G. W. (see Stuyts, A. L.)—1282(L)
Redheffer, R. M., R. C. Wildman, and V. O'Gorman. Computation of dielectric constants—505; errata—1413
Reinsch, A. J. and H. G. Drickamer. Effect of pressure on scintillation phosphors—152(L)
Renzema, T. S. Electron diffraction investigation of polished surfaces—1412(L)
Resler, E. L., Shao-Chi Lin, and Arthur Kantrowitz. The production of high temperature gases in shock tubes—1390
Rinehart, John S. (see Allen, William A.)—132
—— (see White, W. C.)—198
—— **and John Pearson.** Conical surfaces of fracture produced by asymmetrical impulsive loading—685
——, **William A. Allen, and W. C. White.** Phenomena associated with the flight of ultra-speed pellets. Part III. General features of luminosity—297
—— (see Pearson, John)—434
—— Scabbing of metals under explosive attack: Multiple scabbing—1229
Roderick, R. L. and Rohn Truell. Measurement of ultrasonic attenuation in solids by the pulse technique and some results in steel—267
Roebuck, John R. On the use of the Joule-Thomson effect to measure the work equivalent of heat. Thermodynamic theory—1119
Rogers, F. T., Jr. (see Morrison, H. L.)—1058(L)
Rogers, T. F. (see Johnson, S. J.)—574
Rogers, T. H. Production of monochromatic x-radiation for microradiography by excitation of fluorescent characteristic radiation—881
Rogosa, George L. (see Brown, L. Carlton)—1054(L)
Rose, David J. (see Brown, Sanborn C.)—711
—— **and Sanborn C. Brown.** Methods of measuring the properties of ionized gases at high frequencies. II. Measurement of electric field—719
—— **and Sanborn C. Brown.** Methods of measuring the properties of ionized gases at high frequencies. III. Measurement of discharge admittance and electron density—1028
Rosenthal, D. and M. Kaufman. X-ray line broadening of plastically deformed marble—600(L)
Rostoker, Norman (see Pugh, Emerson M.)—532
Rothstein, Jerome. Organization and entropy—1281(L)
Russell, B. R. (see Miller, P. H., Jr.)—1163
Ryge, G. (see Moffett, J. C.)—1188(L)

Sato, Hiroshi. Energy transference between wave numbers in isotropic turbulence—698(L)
Sawyer, R. B. (see Hogan, C. L.)—177
—— (see Hogan, C. L.)—600
Saxon, David S. (see Baños, Alfredo, Jr.)—688

Saxton, R. L. and W. E. Ranz. Thermal force on an aerosol particle in a temperature gradient—917
Schaefer, D. L. and John E. White. Physical processes in the *L* cathode—669
Schindler, Mark (see Weissler, G. L.)—844
Schrag, Robert L. (see Gibbons, J. J.)—1139
Schultz, Edna L. (see Norton, Kenneth A.)—137
Schwarz, Guenter (see Brown, L. Carlton)—1054(L)
Schwarzl, F. and A. J. Staverman. Time-temperature dependence of linear viscoelastic behavior—838
Schwed, Philip and Gerhart Groetzinger. Considerations regarding the distribution of radiation damage in matter bombarded by light ions and a method of making it uniform—234
Scott Blair, G. W. Application of Nutting's equation to the viscoelastic behavior of certain polymeric systems—600(L)
Scott, G. D. (see Ells, C. E.)—31
Seemann, H. E. (see Splettstosser, H. R.)—1217
Shenfil, Leon, Warren E. Danielson, and Jesse W. M. DuMond. Point focusing x-ray monochromator for the study of low angle diffraction—854
—— (see Danielson, Warren E.)—860
Shepherd, W. G. (see Leverton, W. F.)—787
Shipley, Daryl W. A method for the measurement of spherical aberration of an electrostatic electron lens—1310
Shook, G. B. Temperature gradient owing to radiation absorption—931(L)
Shreffler, R. G. (see Koski, W. S.)—1300
Sidhu, S. S. and J. C. McGuire. An x-ray diffraction study of the hafnium-hydrogen system—1257
Sieck, P. W. (see Nolle, A. W.)—888
Siegert, Arnold J. F. On the evaluation of noise samples—737
Simha, Robert. Treatment of the viscosity of concentrated suspensions—1020
Simons, J. C. and J. C. Slater. Electromagnetic resonant behavior of a confocal spheroidal cavity system in the microwave region—29
Simmons, L. M. (see Gutmann, F.)—977
Skolnik, Merrill and T. B. Jones. Characteristics of the high current tungsten arc in argon, helium, and their mixtures—643
Slade, J. J., Jr., and Sigmund Weissmann. Study of imperfections of crystal structure in polycrystalline materials: Low carbon alloy and silicon ferrite—323
Slater, J. C. (see Simons, J. C.)—29
—— (see Demos, P. T.)—53
—— (see Terrall, J. R.)—66
—— (see Maier, L. C., Jr.)—68
—— (see Maier, L. C., Jr.)—78
Slifkin, L. and W. Kauzmann. Creep of zinc single crystals—746
——, **D. Lazarus, and T. Tomizuka.** Self-diffusion in pure polycrystalline silver—1032
——, **D. Lazarus, and T. Tomizuka.** The diffusion of antimony in silver single crystals—1405(L)
Small, T. R. (see Faro, I.)—40
Smith, C. A. (see Faris, F. E.)—89
Smith, Charles S. (see Neighbours, J. R.)—389
—— (see Fein, A. E.)—1212
Smith, H. M. and S. Hansen. Shadow of an electron beam—1054(L)
Smith, J. L. (see Germer, L. H.)—553
Smoluchowski, R. (see Achter, M. R.)—373(L)
—— (see Flanagan, R.)—785
Smythe, W. R. Flow over thick plate with circular hole—447
—— The resistance of a truncated hemisphere—1280(L)
Solomon, Salim S. Thermal and shot fluctuations in electrical conductors and vacuum tubes—109
Spiegel, M. R. Dirac delta-function and the summation of Fourier series—906
Splettstosser, H. R. and H. E. Seemann. Application of fluorescence x-rays to metallurgical microradiography—1217
Staras, Harold. Scattering of electromagnetic energy in a randomly inhomogeneous atmosphere—1152
Staverman, A. J. (see Schwarzl, F.)—838
Stevenson, A. F. Errata: General theory of electromagnetic horns—599
Storer, James E. Radiation pattern of an antenna over a circular ground screen—588
Strang, C. D. (see Burwell, J. T.)—18
Straumanis, M. E. and E. Z. Aka. Lattice parameters, coefficients of thermal expansion, and atomic weights of purest silicon and germanium—330
Stuyts, A. L., G. W. Rathenau, and E. W. Gorter. Preferred crystal orientation in ferromagnetic ceramics—1282(L)
Swenson, George W., Jr., and Thomas J. Higgins. Direct-current network analyzer for solving wave-equation boundary-value problems—126
Syeles, Albert M. (see Adams, Edmond)—1207

Tai, C. T. Electromagnetic back-scattering from cylindrical wires—909
Takahashi, Hiroshi (see Namiki, Mikio)—1056(L)
Takahashi, Shuichiro. Anelasticity of zinc—866
Tatibana, Masao (see Isihara, Akira)—308
Teichmann, T. Completeness relations for loss-free microwave junctions—701
Terrall, J. R. and J. C. Slater. Particle dynamics in the linear accelerator—66
Thompson, Donald O. (see Artman, Robert A.)—470
—— Creep of zinc single crystals—1277(L)
Toffolo, D. S. (see Kirshner, J. M.)—594
Tomizuka, T. (see Slifkin, L.)—1032
—— (see Slifkin, L.)—1405(L)
Tomlinson, T. B. Space charge reduction of low frequency fluctuations in thermionic emitters—894
Tonks, Lewi. The complete solution of the one-velocity diffusion problem at intermediate and large distances—1085
Trilling, Leon. Collapse and rebound of a gas bubble—14
Truell, R. (see Roderick, R. L.)—267
—— (see Ying, C. F.)—1339
Trump, J. G. (see Webster, E. W.)—264
Tsien, H. S. (see Penner, S. S.)—256
Turnbull, D. (see Hoffman, R. E.)—1409(L)
Twersky, Victor. Multiple scattering of radiation by an arbitrary planar configuration of parallel cylinders and by two parallel cylinders—407
—— On a multiple scattering theory of the finite grating and the wood anomalies—1099

Van de Graaff, R. J. (see Webster, E. W.)—264
van der Ziel, A. (see Lindemann, W. W.)—1410(L)
van Roosbroeck, W. Large current amplifications in filamentary transistors—1411(L)
Vasileff, H. D. On the calorimetric heat exchange correction—979
Vigness, Irwin. Investigation of stress-strain relations of metal wires by electrical resistance changes—43
Vineyard, George H. Simulation of trajectories of charged particles in magnetic fields—35

Wahl, D. (see Kehl, W. L.)—212
Wahlin, H. B., Robert Zentner, and James Martin. Spectral emissivity of iron-nickel alloys—107
Wait, James R. Current-carrying wire loops in a simple inhomogeneous region—497(L)

—— Reflection of electromagnetic waves obliquely from an inhomogeneous medium—1403(L)
Waldo, W. H. Concerning the Letter by Mr. P. E. Ohmart on "A method of producing electric current from radioactivity"—290(L)
Walker, C. B. X-ray measurement of order in CuPt—118
Wallmark, J. T. Influence of initial velocities on electron transit time in diodes—1096
Warren, B. E. (see Cole, H.)—335
—— **and B. L. Averbach.** Separation of cold-work distortion and particle size broadening in x-ray patterns—497(L)
—— **and B. L. Averbach.** Separation of stacking fault broadening in cold-worked metals—1059(L)
Watkins, Dean A. Effect of velocity distribution in a modulated electron stream—568
Watson, John H. L. and William L. Grube. Reliability of internal standards for calibrating electron microscopes—793
Weber, C. E. (see Fisher, Thomas F.)—181
Weber, D. (see Holm, R. J.)—1283(L)
Webster, E. W., R. J. Van de Graaff, and J. G. Trump. Secondary electron emission from metals under positive ion bombardment in high extractive fields—264
Wehner, Gottfried and Gustav Medicus. Reliability of probe measurements in hot cathode gas diodes—1035
Weinberg, Elliott H. Creep of zinc single crystals under direct shear—1277(L)
Weiss, R. J., J. R. Clark, L. Corliss, and J. Hastings. Neutron diffraction studies of cold-worked brass—1379
Weissler, G. L. and Mark Schindler. Estimate of the energies of the positive ions in a negative point-to-plane corona—844
Weissmann, Sigmund (see Slade, J. J., Jr.)—323
Welber, Benjamin. Measurement of the internal energy in copper introduced by cold work—876
Weyl, W. A. (see Otley, K. O.)—499(L)
White, John E. (see Schaefer, D. L.)—669
White, W. C. (see Allen, William A.)—132
——, **John S. Rinehart, and William A. Allen.** Phenomena associated with the flight of ultra-speed pellets. Part II. Spectral character of luminosity—198
—— (see Rinehart, John S.)—297
Whitmer, Robert M. Radiation from a dielectric wave guide—949
Wiener, Bernard and Gerhart Groetzinger. Influence of cold work on the Hall effect of a metal—441
Wildman, R. C. (see Redheffer, R. M.)—505, 1413
Willenbrock, F. Carl. Erratum: Review of book entitled "Microwave Electronics"—600
Williams, Everard M. (see Woodford, James B., Jr.)—722
Williams, H. J. and Matilda Goertz. Domain structure of Perminvar having a rectangular hysteresis loop—316
Willig, F. J. (see Koski, W. S.)—1300
Willmarth, W. W. and H. T. Nagamatsu. The condensation of nitrogen in a hypersonic nozzle—1089
Wise, Henry. Note on the discharge coefficient of a critical-flow nozzle—801(L)
Witzig, Warren F. Creep of copper under deuteron bombardment—1263
Woodford, James B., Jr., and Everard M. Williams. Initial conduction interval in high speed thyratrons—722
Woonton, G. A. Diffraction field of a circular aperture—1405(L)
Wroughton, D. M. (see Okress, E. C.)—545, 1413

Yamaguchi, Shigeto. Note on "Electron microradiography of electrodeposited metals"—288(L)
—— Structure of oxide replicas for electron microscopy—445
—— Markings found in the oxide replicas for electron microscopy—935
—— Metallic corrosion influenced by ultrasonic waves—1057(L)
—— A combination of electron microscopy and optical phase-contrast microscopy—1404(L)
Yamaka, Eiso. Study of oxide-coated cathode by x-ray diffraction method—498(L)
—— Study of the oxide-coated cathodes by x-ray diffraction method (I)—937
Yarbrough, Helen (see Norton, Kenneth A.)—137
Ying, C. F., S. L. Levy, and R. Truell. Complicated domain patterns on iron-silicon single crystals—1339
Young, Gale (see Karush, William)—1191
Young, J. R. Electrical conductivity and thermoelectric power of (BaSr)O and BaO—1129
Yurko, M. (see Chipman, R. A.)—613

Zadeh, Lotfi A. and Kenneth S. Miller. Generalized ideal filters—223
Zemany, Paul D. Free molecular flow in the sample inlet to the mass spectrometer—924
Zentner, Robert (see Wahlin, H. B.)—107
Zieman, Clayton M. Dielectric constants of various gases at 9470 Mc—154(L)
Zimmerman, J. E. (see Estermann, I.)—578
Zwick, S. A. (see Plesset, M. S.)—95

Subject Index to Volume 23

References with (L) are to Letters to the Editor

Aberration, spherical, of an electrostatic electron lens, Method for measurement of, Daryl W. Shipley—1310
Admittance of a diode with a retarding field, J. J. Freeman —743
Aerodynamics, E. L. Resler, Shao-Chi Lin, and Arthur Kantrowitz—1390
Aerosol particle in a temperature gradient, Thermal force on, R. L. Saxton and W. E. Ranz—917
Allotropic transformation of hafnium and a tentative equilibrium diagram of the system zirconium-hafnium, J. D. Fast—350
Alloy, binary, Intensity calculation for determining weight percentage in, P. K. Koh, B. Caugherty, and R. E. Burket —698(L)
Alloys, binary, Electrical resistance of, Rolf Landauer—779
Alloys at low temperatures, Heat conduction in, I. Estermann and J. E. Zimmerman—578
Alloys, Co-Pt, New superlattice in, A. H. Geisler and D. L. Martin—375(L)
Alloys, iron-nickel, Spectral emissivity of, H. B. Wahlin, Robert Zentner, and James Martin—107
Alnico 5, Physical structure and magnetic anisotropy of. Part I, R. D. Heidenreich and E. A. Nesbitt—352
Alnico 5, Physical structure and magnetic anisotropy of. Part II, E. A. Nesbitt and R. D. Heidenreich—366
Alpha-radiation damage in zircon, Patrick M. Hurley and Harold W. Fairbairn—1408(L)
Amalgams, Silver—tin, Phase changes in, J. C. Moffet, G. Ryge, and A. G. Barkow—1188(L)
Amplifiers, parallel-connected magnetic, with resistive loads, Louis A. Pipes—625
Amplitude pulsations in the vibrational strain pattern of metal single crystals, J. W. Marx—1406(L)
Analogue computing devices, George W. Swenson, Jr., and Thomas J. Higgins—126
Anelasticity of zinc, Shuichiro Takahashi—866
Angular shift of the transmitted x-ray beam near the Bragg angle, L. Carlton Brown, George L. Rogosa, and Guenter Schwarz—1054(L)
Annealing kinetics in cold-worked copper, Study of, Dwain Bowen, R. R. Eggleston, and R. H. Kropschot—630
Announcements—156, 375, 504, 522, 536, 803, 934, 1064, 1095, 1142, and 1288
Antenna beam shaping, On the theory of, Allen S. Dunbar —847
Antenna of circular cross section excited in rotationally symmetrical modes, C. M. McKinney—11
Antenna, Radiation field of a square, helical beam, H. Lottrup Knudsen—483
Antenna, Radiation pattern of, over a circular ground screen, James E. Storer—588
Antenna, turnstile, Radiation characteristics of, Alfredo Baños, Jr., David S. Saxon, and Louis L. Bailin—688
Antennas, Ronold King—1174
Antennas, C. T. Tai—909
Antennas, receiving, Radiation or diffraction patterns close to, L. S. Palmer—289(L)
Approach of narrow band noise after a nonlinear device to a normal probability density, George R. Arthur—1143
Arc, high current, Merrill Skolnik and T. B. Jones—643
Arcing at electrical contacts on closure. Part III. Development of an arc, L. H. Germer and J. L. Smith—553
Astro-physics, John S. Rinehart, William A. Allen, and W. C. White—297
Atomic clocks and frequency stabilization, C. R. S. Ince—1408(L)
Atomic weights of purest silicon and germanium, Lattice parameters, coefficients of thermal expansion and, M. E. Straumanis and E. Z. Aka—330
Axial motion of an electron in a constant wave velocity section of a linear accelerator, David Caplan and Edward Akeley—774

Bariated tungsten emitters, Ray C. Hughes and Patrick P. Coppola—1261
Barium oxide cathodes, R. C. Hughes, P. P. Coppola, and H. T. Evans—635
Bessel functions, A property of, and its application to the theory of two rheometers, Hershel Markovitz—1070
Beta-brass single crystals, Elastic constants of, Robert A. Artman and Donald O. Thompson—470
Beta-brass single crystals, Temperature dependence of Young's modulus and internal friction of, Robert A. Artman—475
Binary alloy, Intensity calculation for determining weight percentage in, P. K. Koh, B. Caugherty, and R. E. Burket —698(L)
Binary metallic mixtures, Electrical resistance of, Rolf Landauer—779
Bismuthide, A new permanent magnet from powdered manganese, Edmond Adams, William M. Hubbard, and Albert M. Syeles—1207
Blue glass which fades upon nuclear radiation. K. O. Otley and W. A. Weyl—499(L)
Bonding of thin films, H. P. Meissner and J. Bryne—1170
Book review of "Microwave electronics," F. Carl Willenbrock—600 (erratum)
Books received—296, 604, and 1062
Books reviewed—291, 602, and 1060
Briggs' limiting negative pressure data, Possible explanation of, V. J. Berry and E. W. Hough—931(L)

Cadmium, Diffusionless transformation in Au-Cd single crystals containing 47.5 atomic percent, Lo-Ching Chang —725
Cadmium, Mechanism of growth of whiskers on, Milton O. Peach—1401(L)
Cadmium sulfide crystals, S. J. Czyzak, D. J. Craig, and C. E. McCain—932(L)
Calorimetric heat exchange correction, H. D. Vasileff—979
Cascades, Unsteady-state separation performance of, I, Elliott W. Montroll and Gordon F. Newell—184
Cathodic sputtering for micro-diffusion studies, Thomas F. Fisher and C. E. Weber—181
Characteristics of the high current tungsten arc in argon, helium, and their mixtures, Merrill Skolnik and T. B. Jones—643
Chemical reactions in barium oxide on tungsten emitters, R. C. Hughes, P. P. Coppola, and H. T. Evans—635
Co-Pt alloys, New superlattice in, A. H. Geisler and D. L. Martin—375(L)
CuPt, X-ray measurement of order in, C. B. Walker—118
Cold-work distortion and particle size broadening in x-ray patterns, Separation of, B. E. Warren and B. L. Averbach —497(L)
Cold-work studies on copper at low temperatures, R. R. Eggleston—1400(L)
Cold-worked copper, Study of the annealing kinetics in, D. Bowen, R. R. Eggleston, and R. H. Kropschot—630

Cold-worked metals, Separation of stacking fault broadening in, B. E. Warren and B. L. Averbach—1059(L)
Collapse and rebound of a gas bubble, Leon Trilling—14
Communication theory, Lotfi A. Zadeh and Kenneth S. Miller —223
Completeness relations for loss-free microwave junctions, T. Teichmann—701
Complex dielectric constants of absorptive liquids by microwave interferometry, Determination of, Franklin H. Branin, Jr.—990
Concept and measurement of impedance in periodically loaded wave guides, Edwin T. Jaynes—1077
Condensation of nitrogen in a hypersonic nozzle, W. W. Willmarth and H. T. Nagamatsu—1089
Conductivity change in polyethylene during γ-irradiation, S. Mayburg and W. L. Lawrence—1006
Conical surfaces of fracture produced by asymmetrical impulsive loading, John S. Rinehart and John Pearson—685
Contribution to the theory of the silicon carbide contact, Else Holm—509
Convection in porous media, Significance of flow-patterns for, H. L. Morrison and F. T. Rogers, Jr.—1058(L)
Copper oxide rectifiers below room temperature, Measurement of the dc resistance of selenium and, D. M. Grimes and Sam Legvold—312
Corona in hydrogen and argon between coaxial cylindrical electrodes over an extended pressure range, Mechanisms of positive and negative, Eugene J. Lauer—300
Corona, negative point-to-plane, Estimate of the energies of the positive ions in, G. L. Weissler and Mark Schindler—844
Corona, negative point-to-plane, Mechanism of the ring discharge in, Allan N. Greenwood—1316
Creep of copper under deuteron bombardment, Warren F. Witzig—1263
Creep of zinc single crystals, L. Slifkin and W. Kauzmann —746
Creep of zinc single crystals, Donald O. Thompson—1277(L)
Creep of zinc single crystals under direct shear, Elliott H. Weinberg—1277(L)
Creeping of a liquid past a mercury seal, Condition for, R. S. Jessup—543
Critical reflections of elastic waves at free surfaces, J. N. Goodier and R. E. D. Bishop—124
Critical reflections of elastic waves at free surfaces, Remark on, W. S. Jardetzky—1279(L)
—— J. N. Goodier—1280(L)
Crystal orientation in ferromagnetic ceramics, A. L. Stuyts, G. W. Rathenau, and E. W. Gorter—1282(L)
Crystal structure in polycrystalline materials, Study of imperfections of: Low carbon alloy and silicon ferrite, J. J. Slade, Jr. and Sigmund Weissmann—323
Crystals with deformation faults, M. S. Paterson—805
Current between inclined planes, Henry F. Ivey—240
Current-carrying wire loops in a simple inhomogeneous region, James R. Wait—497(L)
Current, large, amplifications in filamentary transistors, W. van Roosbroeck—1411(L)
Cyclotron bombardment, Effect of, on self-diffusion in silver, R. D. Johnson and A. B. Martin—1245
Cyclotron, target, Philip Schwed and Gerhart Groetzinger—234

Dc and microsecond pulsed emission from oxide coated cathodes, Correlation of, Frank A. Horak—346
Dc resistance of selenium and copper oxide rectifiers below room temperature, Measurement of, D. M. Grimes and Sam Legvold—312
Deformation and fracturing of thick-walled steel cylinders under explosive attack, John Pearson and John S. Rinehart—434
Determination of field strength in a linear accelerator cavity, L. C. Maier, Jr., and J. C. Slater—78
Diatomic gases, Emission of radiation from. III. Numerical emissivity calculations for carbon monoxide for low optical densities at 300°K and atmospheric pressure, S. S. Penner, M. H. Ostrander, and H. S. Tsien—256
Diatomic gases, Emission of radiation from. IV. Emissivity of calculations for CO and HCl for nonoverlapping rotational lines as a function of temperature and optical density, S. S. Penner—825
Dielectric amplifier, Louis A. Pipes—818
Dielectric constant of water vapor in the microwave region, George Birnbaum and S. K. Chatterjee—220
Dielectric constant of dry air, J. V. Hughes and H. L. Armstrong—501
Dielectric constants, Computation of, R. M. Redheffer, R. C. Wildman, and V. O'Gorman—505
Dielectric constants of absorptive liquids by microwave interferometry, Franklin H. Branin, Jr.—990
Dielectric constants of various gases at 9470 Mc, Clayton M. Zieman—154(L)
Dielectric image line, D. D. King—699(L)
Dielectric properties of ice and snow at 3.2 centimeters, W. A. Cumming—768
Dielectric wave guide, Radiation from, Robert M. Whitmer —949
Dielectrics, Herbert Bauss and R. F. Boyer—802(L)
Differential equations, Accumulation of errors in the numerical solution of, A. Papoulis—173
Differential equations, nonlinear, Reversion method for solving, Louis A. Pipes—202
Diffraction, V. Twersky—1099
Diffraction field of a circular aperture, G. A. Woonton—1405(L)
Diffraction of electromagnetic waves by an aperture in an infinite screen, G. Bekefi—1403(L)
Diffraction problems, New method of solving, Hans E. J. Neugebauer—1406(L)
Diffraction measurements at 1.25 centimeters, Ralph D. Kodis —249
Diffraction of a shock or an electromagnetic pulse by a right-angled wedge, Joseph B. Keller—1267
Diffusion, R. W. Balluffi and B. H. Alexander—953
Diffusion and erosion, Turbulent, Richard W. Davies—941
Diffusion coefficient, J. J. Lander, H. E. Kern, and A. L. Beach—1305
Diffusion in substitutional solid solutions, Development of porosity during, R. W. Balluffi and B. H. Alexander—1237
Diffusion of antimony in silver single crystals, L. Slifkin, D. Lazarus, and T. Tomizuka—1405(L)
Diffusion, one-velocity, problem at intermediate and large distances, Complete solution of, Lewi Tonks—1085
Diffusion, Polygonization during, R. W. Balluffi—1407(L)
Diffusionless transformation in Au-Cd single crystals containing 47.5-atomic percent cadmium: Characteristics of single-interface transformation, Lo-Ching Chang—725
Dimensional changes normal to the direction of diffusion, R. W. Balluffi and B. H. Alexander—953
Diode plate current, Effect of filament voltage on, Henry F. Ivey—1254
Diode with a retarding field, Admittance of, J. J. Freeman —743
Diodes and the transit time of electrons as functions of current, Electric field in, Paul L. Copeland and Delbert N. Eggenberger—280
Diodes, hot cathode gas, Reliability of probe measurements in, Gottfried Wehner and Gustav Medicus—1035

Diodes, Influence of initial velocities on electron transit time in, J. T. Wallmark—1096
Diodes, planar, for relativistic velocities, Space charge and transit time considerations in, Henry F. Ivey—208
Dirac delta-function and the summation of Fourier series, M. R. Spiegel—906
Direct determination of the flow curves of non-Newtonian fluids, Irvin M. Krieger and Samuel H. Maron—147
Direct printing of shadowed electron micrographs, R. M. Fisher—153(L)
Discharge coefficient of a critical-flow nozzle, Henry Wise —801(L)
Discrepancy in observations of the heat transfer between a vertical surface and a fluidized bed of particles, Max Jakob —1056(L)
Distribution of activation energies for viscoelastic deformation, W. James Lyons—287(L)
Drift velocity of electrons in argon and argon mixture, J. M. Kirshner and D. S. Toffolo—594

Eddy currents, E. C. Okress, D. M. Wroughton, G. Comenetz, P. H. Brace, and J. C. R. Kelly—545
Eddy currents in solid cylindrical cores having nonuniform permeability, Harold Aspden—523
Effect of accelerating voltage and specimen morphology on electron diffraction patterns, S. G. Ellis—1024
Effect of internal strains on linear expansion, x-ray lattice constant, and density of crystals, P. H. Miller, Jr., and B. R. Russell—1163
Eigenvalue problems, Iterative method for the solution of, V. J. Berry and C. R. de Prima—195
Elastic constants of β-brass with composition, Change of, H. Jones—697(L)
Elastic constants of beta-brass single crystals, Robert A. Artman and Donald O. Thompson—470
Elastic constants of nickel, J. R. Neighbours, F. W. Bratten, and Charles S. Smith—389
Elastic moduli of polycrystalline graphite, Thermal dependence of, F. E. Faris, L. Green, Jr., and C. A. Smith—89
Elastic spectrum, Approximate, of β-brass from x-ray scattering, H. Cole and B. E. Warren—335
Elastic waves at free surfaces, Critical reflections of, J. N. Goodier and R. E. D. Bishop—124
Elastic waves in a cylindrical bore containing a fluid, M. A. Biot—997
Elasticity, F. Schwarzl and A. J. Staverman—838
Electric bulb on the polarity of the rectified current, Effect of gas pressure in, Shang-Yi Ch'en and Wei-Cheng Li—228
Electric circuits, W. J. Cunningham—653
Electric potential produced by two point current sources in a homogeneous conducting sphere, Ernest Frank—1225
Electrical breakdown in vacuum, Initiation of, Lawrence Cranberg—518
Electrical conductivity of oxide-coated cathodes, Thermionic emission and, Shin-ichiro Narita—599(L)
Electrical conductivity and thermoelectric power of (BaSr)O and BaO, J. R. Young—1129
Electrical conductors and vacuum tubes, Thermal and shot fluctuations in, Salim S. Solomon—109
Electrical contacts on closure, Arcing at. Part III. Development of an arc, L. H. Germer and J. L. Smith—553
Electrical noise from instrument cables subjected to shock and vibration, Thomas A. Perls—674
Electrical properties of metals, Irwin Vigness—43
Electrical properties of porous semiconductors, Eugene B. Hensley—1122
Electrical resistance, Dwain Bowen, R. R. Eggleston, and R. H. Kropschot—630
Electrical resistance of heterogeneous alloys, Rolf Landauer —779
Electrodes, Space-charge-limited currents between plane, Henry F. Ivey—240
Electromagnetic back-scattering from cylindrical wires, C. T. Tai—909
Electromagnetic field of a rotating uniformly magnetized sphere, Alfredo Baños, Jr., and Robert K. Golden—1294
Electromagnetic levitation of solid and molten metals, E. C. Okress, D. M. Wroughton, G. Comenetz, P. H. Brace, and J. C. R. Kelly—545
Electromagnetic problems, Reduction of three-dimensional, John W. Miles—372(L)
Electromagnetic pulse by a right-angled wedge, Diffraction of a shock or an, Joseph B. Keller—1267
Electromagnetic reflection and transmission by gratings of resistive wires, Edward A. Lewis and Joseph P. Casey, Jr. —605
Electromagnetic resonant behavior of a confocal spheroidal cavity system in the microwave region, J. C. Simons and J. C. Slater—29
Electromagnetic waves, Reflections of, obliquely from an inhomogeneous medium, James R. Wait—1403(L)
Electron beam, cylindrical, of finite lateral extension, Space-charge-wave propagation in, Philip Parzen—215
Electron beam, Shadow of, H. M. Smith and S. Hansen—1054(L)
Electron diffraction evidence for the existence of microstress in evaporated metal films, Eber K. Halteman—150
Electron diffraction patterns, Effect of accelerating voltage and specimen morphology on, S. G. Ellis—1024
Electron dynamics, J. J. Freeman—743
Electron emission, D. L. Schaefer and John E. White—669
Electron emission, Secondary, from metals under positive ion bombardment in high extractive fields, E. W. Webster, R. J. Van de Graaff, and J. G. Trump—264
Electron in a constant wave velocity section of a linear accelerator, David Caplan and Edward Akeley—774
Electron micrographs, shadowed, Direct printing of, R. M. Fisher—153(L)
Electron microradiography of electrodeposited metals, Shigeto Yamaguchi—288(L)
Electron microscope, S. G. Ellis—728
Electron Microscope Society of America, Program of the—156
Electron microscope study of plasticized latices, E. B. Bradford—609
Electron microscopes, Reliability of internal standards for calibrating, John H. L. Watson and William L. Grube—793
Electron microscopy of synthetic latices, Samuel H. Maron, Carl Moore, and Allen S. Powell—900
Electron microscopy, Structure of oxide replicas for, Shigeto Yamaguchi—445
Electron microscopy, Markings found in the oxide replicas for, Shigeto Yamaguchi—935
Electron microscopy and optical phase-contrast microscopy, Combination of, Shigeto Yamaguchi—1404(L)
Electron motion in electric and magnetic field, Integrable case of, H. Poritsky and R. P. Jerrard—928
Electron optics, Daryl W. Shipley—1310
Electron paths in magnetic fields, George H. Vineyard—35
Electron stream, modulated, Velocity distribution in, Dean A. Watkins—568
Electronic properties of barium sulfide, Walter Grattidge and Harold John—1145
Electronics, Philip Parzen—394
Electrons as functions of current, Electric field in diodes and the transit time of, Paul N. Copeland and Delbert N. Eggenberger—280

Electrons in argon and argon mixtures, Drift velocity of, J. M. Kirshner and D. S. Toffolo—594
Emission of radiation from diatomic gases. III. Numerical emissivity calculations for carbon monoxide for low optical densities at 300°K and atmospheric pressure, S. S. Penner, M. H. Ostrander, and H. S. Tsien—256
Emission of radiation from diatomic gases. IV. Emissivity of calculations for CO and HCl for nonoverlapping rotational lines as a function of temperature and optical density, S. S. Penner—825
Emissivity for CO_2 at elevated pressures, R. J. Holm, D. Weber, and S. S. Penner—1283(L)
Empirical law of adhesive wear, J. T. Burwell and C. D. Strang—18
Energy transference between wave numbers in isotropic turbulence, Hiroshi Sato—698(L)
Entropy and information, Physical, D. A. Bell—372(L)
Entropy, Organization and, Jerome Rothstein—1281(L)
Equivalences for the analysis of circuits with small nonlinearities, W. J. Cunningham—653
Errata:
General theory of electromagnetic horns, A. F. Stevenson—599
Thermal conductivity of metals at high temperature, C. L. Hogan and R. B. Sawyer—600
Review of book entitled "Microwave Electronics," F. Carl Willenbrock—600
Direct determination of the flow curves of non-Newtonian fluids, I. M. Krieger and S. H. Maron—1412
Interferometric analysis of airflow about projectiles in free flight, F. D. Bennett, W. C. Carter, and V. E. Bergdolt—1412
Computations of dielectric constants, R. M. Redheffer, R. C. Wildman, and V. O'Gorman—1413
Electromagnetic levitation of solid and molten metals, E. C. Okress, D. M. Wroughton, G. Comenetz, P. H. Brace, and J. C. R. Kelly—1413
Errors in measurements on random time functions, W. B. Davenport, Jr., R. A. Johnson, and D. Middleton—377
Errors in the numerical solution of differential equations, On the accumulation of, A. Papoulis—173
Errors in the x-ray reflection method for the quantitative determination of preferred orientations, Warren P. Chernock and Paul A. Beck—341
Estimate of the energies of the positive ions in a negative point-to-plane corona, G. L. Weissler and Mark Schindler—844
Evaluation of noise samples, Arnold J. F. Siegert—737
Expansion in crystals, P. H. Miller, Jr., and B. R. Russell—1163
Experimental investigation of the dielectric rod antenna of circular cross section excited in rotationally symmetrical modes, C. M. McKinney—11
Experimental verification of source size theory for the Mach-Zehnder interferometer, G. D. Kahl and F. D. Bennett—763
Experimental verification of the theory of jet formation by charges with lined conical cavities, R. J. Eichelberger and Emerson M. Pugh—537
Explosions, John S. Rinehart and John Pearson—685
Explosions, J. A. McFadden—1269
Explosives, Glass cracking caused by, E. M. Pugh, R. v. Heine-Geldern, S. Foner, and E. C. Mutschler—48

Ferroelectrics, W. L. Kehl, R. G. Hay, and D. Wahl—212
Field strength in a linear accelerator cavity, Determination of, L. C. Maier, Jr., and J. C. Slater—78
Field strength measurements in resonant cavities, L. C. Maier, Jr., and J. C. Slater—68
Film boiling termination mechanism, J. W. Marx and B. I. Davis—1354
Films, thin, Bonding of, H. P. Meissner and J. Byrne—1170
Filters, ideal, Generalized, Lotfi A. Zadeh and Kenneth S. Miller—223
Flicker noise, T. B. Tomlinson—894
Flicker noise caused by an interface layer, W. W. Lindemann and A. van der Ziel—1410(L)
Flow over thick plate with circular hole, W. R. Smythe—447
Flow-patterns for initial convection in porous media, Significance of, H. L. Morrison and F. T. Rogers, Jr.—1058(L)
Fluid dynamics, F. D. Bennett, W. C. Carter, and V. E. Bergdolt—453
Fluid mechanics, John S. Rinehart, William A. Allen, and W. C. White—297
Fluid mechanics, W. W. Willmarth and H. T. Nagamatsu—1089
Fluorescence, x-ray, T. H. Rogers—881
Fluorescence x-rays, Application of, to metallurgical microradiography, H. R. Splettstosser and H. E. Seemann—1217
Fluorescent analysis, P. K. Koh, B. Caugherty, and R. E. Burket—698(L)
Flow, liquid in sphere, Ernest Frank—1225
Focusing in a beta-ray spectrometer with tilted sources, C. M. Fowler and P. Domotor—415
Forced thickness-shear and flexural vibrations of piezoelectric crystal plates, Raymond D. Mindlin—83
Fourier analysis of waves, Chester H. Page—103
Fourier series, Dirac delta-function and the summation of, M. R. Spiegel—906
Fracture produced by asymmetrical impulsive loading, Conical surfaces of, John S. Rinehart and John Pearson—685
Fracturing of thick-walled steel cylinders under explosive attack, Deformation and, John Pearson and John S. Rinehart—434
Free molecular flow in the sample inlet to the mass spectrometer, Paul D. Zemany—924
Frequency modulation, Kenneth A. Norton, Edna L. Schultz, and Helen Yarbrough—137

Gas bubble, Collapse and rebound of, Leon Trilling—14
Gas pressure in the electric bulb on the polarity of the rectified current, Effect of, Shang-Yi Ch'en and Wei-Cheng Li—228
Gases, diatomic. III. Numerical emissivity calculations for carbon monoxide for low optical densities at 300°K and atmospheric pressure, S. S. Penner, M. H. Ostrander, and H. S. Tsien—256
Gases, diatomic. IV. Emissivity of calculations for CO and HCl for nonoverlapping rotational lines as a function of temperature and optical density, S. S. Penner—825
Gases, ionized. I. Measurements of Q, Sanborn C. Brown and David J. Rose—711
Gases, ionized. II. Measurement of electric field, David J. Rose and Sanborn C. Brown—719
Gases, ionized. III. Measurement of discharge admittance and electron density, David J. Rose and Sanborn C. Brown—1028
Gases, various, at 9470 Mc, Dielectric constants of, Clayton M. Zieman—154(L)
General theory of electromagnetic horns, A. F. Stevenson—599 (errata)
Germanium, Lattice parameters, coefficients of thermal expansion, and atomic weights of purest silicon and, M. E. Straumanis and E. Z. Aka—330
Glass cracking caused by high explosives, E. M. Pugh, R. v. Heine-Geldern, S. Foner, and E. C. Mutschler—48
Grain boundaries, Diffusion in, M. R. Achter and R. Smoluchowski—373(L)
Grain boundaries, Diffusion in, M. H. Dawson—373(L)

Grain boundary diffusion, L. Slifkin, D. Lazarus, and T. Tomizuka—1032
Grain boundary diffusion of zinc in copper, R. Flanagan and R. Smoluchowski—785
Graphite, artificial, Electrical resistivity of, Jun Okada and Tatsuo Ikegawa—1282(L)
Graphite, polycrystalline, Thermal dependence of the elastic moduli of, F. E. Faris, L. Green, Jr., and C. A. Smith—89

Hafnium, Allotropic transformation of, and a tentative equilibrium diagram of the system zirconium-hafnium, J. D. Fast—350
Hall effect of a metal, Influence of cold work on, Bernard Wiener and Gerhart Groetzinger—441
Harmonic analysis, M. R. Spiegel—906
Heat conduction, H. D. Vasileff—979
Heat conduction alloys at low temperatures, I. Estermann and J. E. Zimmerman—578
Heat conduction along an exponential bar, John W. Miles —372(L)
Heat diffusion problem with spherical symmetry, Nonsteady, M. S. Plesset and S. A. Zwick—95
Heat flow problem for a quarter infinite solid, William Karush—492
Heat, mechanical equivalent of, John R. Roebuck—1119
Heat-producing solid behind a surface defect, Temperature rise in, William Karush and Gale Young—1191
Heat transfer between a vertical surface and a fluidized bed of particles, Max Jakob—1056(L)
Heat transfer in isotropic turbulence, Stanley Corrsin—113
High polymer physics, Hershel Markovitz—1070
High vacuum flow analogy, G. W. Monk—799(L)
High voltage generator, E. G. Linder and S. M. Christian—1213
Hydrogen, Mass-spectrographic study of ionic reactions in, Raymond L. Murray—6
Hysteresis loop, rectangular, Domain structure of Perminvar having, H. J. Williams and Matilda Goertz—316

Incandescent lamp bulbs in voltage stabilizers, W. J. Cunningham—658
Influence of initial velocities on electron transit time in diodes, J. T. Wallmark—1096
Information theory and its application to taxonomy, D. K. C. MacDonald—529
Influence of cold work on the Hall effect of a metal, Bernard Wiener and Gerhart Groetzinger—441
Initial conduction interval in high speed thyratrons, James B. Woodford, Jr., and Everard M. Williams—722
Initiation of electrical breakdown in vacuum, Lawrence Cranberg—518
Instabilities in the smooth-anode cylindrical magnetron, Lawrence A. Harris—562
Instrument cables subjected to shock and vibration, Electrical noise from, Thomas A. Perls—674
Intensity calculation for determining weight percentage in a binary alloy by x-ray fluorescent analysis, P. K. Koh, B. Caugherty, and R. E. Burket—698(L)
Interferometric analysis of airflow about projectiles in free flight, F. D. Bennett, W. C. Carter, and V. E. Bergdolt—453
Interior ballistics for rocket motors, E. W. Price—142
Internal standards for calibrating electron microscopes, Reliability of, John H. L. Watson and William L. Grube—793
Investigation of stress-strain relations of metal wires by electrical resistance changes, Irwin Vigness—43
Ion bombardment, positive, in high extractive fields, Secondary electron emission from metals under, E. W. Webster, R. J. Van de Graaff, and J. G. Trump—264
Ion mobilities, Eugene J. Lauer—300
Ionic reactions in hydrogen, Mass-spectrographic study of, Raymond L. Murray—6
Ions, light, distribution of radiation damage in matter bombarded by, and a method of making it uniform, Philip Schwed and Gerhart Groetzinger—234
Isotropic turbulence, Heat transfer in, Stanley Corrsin—113
Iterative method for the solution of eigenvalue problems, V. J. Berry and C. R. de Prima—195

Jet formation by charges with lined conical cavities, Experimental verification of the theory of, R. J. Eichelberger and Emerson M. Pugh—537
Jet formation by charges with lined conical cavities, Theory of, Emerson M. Pugh, R. J. Eichelberger, and Norman Rostoker—532
Jets, fast, from collapsing cylinders, W. S. Koski, F. A. Lucy, R. G. Shreffler, and F. J. Willig—1300
Joule-Thomson effect, Use of, to measure the work equivalent of heat. Thermodynamic theory, John R. Roebuck—1119

Kinetics, annealing, in cold-worked copper, Dwain Bowen, R. R. Eggleston, and R. H. Kropschot—630
Kinetics of ordering in Ni_3Mn, Lewis R. Aronin—642
Kirkendall effect, R. W. Balluffi and B. H. Alexander—953
Kirkendall effect in alloy systems, Herbert N. Hersh—1055(L)

Latex particles by x-ray scattering, Size of, B. R. Leonard, Jr., J. W. Anderegg, Paul Kaesberg, and W. W. Beeman —152(L)
Latex, synthetic, Samuel H. Maron, Carl Moore, and Allen S. Powell—900
Lattice imperfections on x-ray broadening, M. S. Paterson—499(L)
Lattice parameters, coefficients of thermal expansion, and atomic weights of purest silicon and germanium, M. E. Straumanis and E. Z. Aka—330
Levitation and fusion in vacuum, E. C. Okress, D. M. Wroughton, G. Comenetz, P. H. Brace, and J. C. R. Kelly—545
Light scattering by pure polystyrene, F. Bueche—1280(L)
Limitations on the maximum frequency of coherent oscillations, Robert S. Elliott—812
Linear accelerator, David Caplan and Edward Akeley—774
Linear accelerator cavity, Determination of field strength in, L. C. Maier, Jr., and J. C. Slater—78
Linear accelerator, Particle dynamics in, J. R. Terrall and J. C. Slater—66
Linear electron accelerator, M.I.T., P. T. Demos, A. F. Kip, and J. C. Slater—53
Liquid, Viscous energy dissipated during the atomization of, G. W. Monk—288(L)
Longitudinal and transverse ultrasonic waves in a synthetic rubber, A. W. Nolle and P. W. Sieck—888
Love waves in a homogeneous crust laid upon heterogeneous medium, Sushil Chandra Das Gupta—1276(L)

Mach-Zehnder interferometer, G. D. Kahl and F. D. Bennett —763
Magnet, New permanent, from powdered manganese bismuthide, Edmond Adams, William M. Hubbard, and Albert M. Syeles—1207
Magnetic amplifier, Mathematical analysis of an inductively loaded parallel-connected, Louis A. Pipes—1358
Magnetic amplifiers, parallel-connected, with resistive loads, Louis A. Pipes—625
Magnetic anisotropy of Alnico 5, Physical structure and, Part I, R. D. Heidenreich and E. A. Nesbitt—352

Magnetic anisotropy of Alnico 5, Physical structure and, Part II, E. A. Nesbitt and R. D. Heidenreich—366
Magnetic domains, H. J. Williams and Matilda Goertz—316
Magnetic field, Integrable case of electron motion in electric and, H. Poritsky and R. P. Jerrard—928
Magnetic fields, Simulation of trajectories of charged particles in, George H. Vineyard—35
Magnetic measurements, S. J. Barnett—975
Magnetic resonance absorption in conductors, N. Bloembergen—1383
Magnetically induced ultrasonic velocity changes in polycrystalline nickel, S. J. Johnson and T. F. Rogers—574
Magnetized sphere, rotating uniformly, Electromagnetic field of, Alfredo Baños, Jr., and Robert K. Golden—1294
Magnetron, smooth-anode cylindrical, Instabilities in, Lawrence A. Harris—562
Marble, plastically deformed, X-ray line broadening of, D. Rosenthal and M. Kaufman—600(L)
Markings found in the oxide replicas for electron microscopy, Shigeto Yamaguchi—935
Mass-spectrographic study of ionic reactions in hydrogen, Raymond L. Murray—6
Mass spectrometer, Free molecular flow in the sample inlet to, Paul D. Zemany—924
Mathematical analysis of a dielectric amplifier, Louis A. Pipes—818
Mathematical analysis of an inductively loaded parallel-connected magnetic amplifier, Louis A. Pipes—1358
Mathematical analysis of parallel-connected magnetic amplifiers with resistive loads, Louis A. Pipes—625
Mathematical analysis of parallel-connected magnetic amplifiers with resistive loads, Comments on, H. S. Kirschbaum —1278(L)
—— Louis A. Pipes—1279(L)
Measurement of the dc resistance of selenium and copper oxide rectifiers below room temperature, D. M. Grimes and Sam Legvold—312
Measurement of the internal energy in copper introduced by cold work, Benjamin Welber—876
Measurement, X-ray, of order in CuPt, C. B. Walker—118
Measurements in hot cathode gas diodes, Gottfried Wehner and Gustav Medicus—1035
Measurements in resonant cavities, Field strength, L. C. Maier, Jr., and J. C. Slater—68
Measuring the properties of ionized gases at high frequencies. I. Measurements of Q, Sanborn C. Brown and David J. Rose—711
Measuring the properties of ionized gases at high frequencies. II. Measurement of electric field, David J. Rose and Sanborn C. Brown—719
Measuring the properties of ionized gases at high frequencies. III. Measurement of discharge admittance and electron density, David J. Rose and Sanborn C. Brown—1028
Mechanics of fluids, Arthur K. Doolittle—236
Mechanics of fluids, F. Gutmann and L. M. Simmons—977
Mercury seals, R. S. Jessup—543
Metal films, Eber K. Halteman—150
Metal-plate media, Reflection of microwaves from, J. J. Brady, M. D. Pearson, and S. R. Peoples—964
Metal transfer and wear, I.-Ming Feng—1011
Metal wires, Investigation of stress-strain relations, by electrical resistance changes, Irwin Vigness—43
Metallic corrosion influenced by ultrasonic waves, Shigeto Yamaguchi—1057(L)
Metallic shadow-casting using a nozzle system, Tadatosi Hibi —957
Metallurgical applications of x-ray fluorescent analysis, P. K. Koh and Betty Caugherty—427
Metals, R. L. Roderick and Rohn Truell—267
Metals at high temperature, Thermal conductivity of, C. L. Hogan and R. B. Sawyer—177
Metals, electrodeposited, Electron microradiography of, Shigeto Yamaguchi—288(L)
Metals under positive ion bombardment in high extractive field, Secondary electron emission from, E. W. Webster, R. J. Van de Graaff, and J. G. Trump—264
Method for determining magnetic moments and for measuring susceptibilities and permeabilities, S. J. Barnett—975
Method of producing electric current from radioactivity, Concerning letter by Mr. P. E. Ohmart on, W. H. Waldo—290(L)
M.I.T. linear electron accelerator, P. T. Demos, A. F. Kip, and J. C. Slater—53
Microchronometric Schlieren study of gaseous expansion from an electric spark, H. L. Olsen, R. B. Edmonson, and E. L. Gayhart—1157
Micro-diffusion studies, Cathodic sputtering for, Thomas F. Fisher and C. E. Weber—181
Microradiography, T. H. Rogers—881
Microstress in evaporated metal films, Electron diffraction evidence of the existence of, Eber K. Halteman—150
Microwave interferometry, Determination of complex dielectric constants of absorptive liquids by, Franklin H. Branin, Jr.—990
Microwave junctions, loss free, Completeness relations for, T. Teichmann—701
Microwave reflection, J. J. Brady, M. D. Pearson, and S. R. Peoples—964
Microwave tubes, Philip Parzen—215
Microwave tubes, Philip Parzen—394
Missiles, Vertical entry of, into water, Albert May—1362
Moduli, elastic, of polycrystalline graphite, Thermal dependence of, F. E. Faris, L. Green, Jr., and C. A. Smith—89
Monochromatic x-radiation for microradiography by excitation of fluorescent characteristic radiation, T. H. Rogers —881
Monochromator, Leon Shenfil, Warren E. Danielson, and Jesse W. M. DuMond—854
Monochromator, Warren E. Danielson, Leon Shenfil, and Jesse W. M. DuMond—860
Multiple scattering of radiation by an arbitrary planar configuration of parallel cylinders and by two parallel cylinders, Victor Twersky—407

Negative point-to-plane corona, Mechanism of the ring discharge, Allan N. Greenwood—1316
Neutron diffraction studies of cold-worked brass, R. J. Weiss, J. R. Clark, L. Corliss, and J. Hastings—1379
Neutron diffusion length, Gilbert N. Plass—621
Neutrons, Lewi Tonks—1085
New booklets and other publications—700
Newtonian flow, Studies in. III. The dependence of the viscosity of liquids on molecular weight and free space (in homologous series), Arthur K. Doolittle—236
Newtonian flow, Studies in. IV. Viscosity *vs* molecular weight in liquids; viscosity *vs* concentration in polymer solutions, Arthur K. Doolittle—418
Nickel, Elastic constants of, J. R. Neighbours, F. W. Bratten, and Charles S. Smith—389
Nitrogen, active, Measurements of physical properties, James M. Benson—757
Noise, George R. Arthur—1143
Noise, R. C. Davis—1047
Noise due to current flow through Ba.Sr oxide coating, K. Amakasu—1330
Noise samples, Arnold J. F. Siegert—737
Noise, theory of, J. J. Freeman—1223
Nonlinear differential equations, Reversion method for solving, Louis A. Pipes—202

Nonlinear oscillations, W. J. Cunningham—653
Non-Newtonian fluids, Direct determination of the flow curves of, Irvin M. Krieger and Samuel H. Maron—147
Nonsteady heat diffusion problem with spherical symmetry, M. S. Plesset and S. A. Zwick—95
Nozzle, hypersonic, Condensation of nitrogen in, W. W. Willmarth and H. T. Nagamatsu—1089
Nozzle, Note on the discharge coefficient of a critical-flow, Henry Wise—801(L)
Nozzle system, Metallic shadow-casting using a, Tadatosi Hibi—957
Numerical solution of differential equations, Accumulation of errors in, A. Papoulis—173
Nutting's equation, Application of, to the viscoelastic behavior of certain polymeric systems, G. W. Scott Blair—600(L)
Nutting's equation, Application of, to the viscoelastic behavior of certain polymeric systems, Rolf Buchdahl and Lawrence E. Nielsen—600(L)

Oil production, R. E. Collins—681
Operations research, what is it?, Philip M. Morse—165
Optical instruments, G. D. Kahl and F. D. Bennett—763
Order in CuPt, X-ray measurement of, C. B. Walker—118
Orientation of crystallites in stretched polyethylene, Samuel Krimm—287(L)
Orientation of crystallites in stretched polyethylene, Reply to Samuel Krimm's note, Alexander Brown—287(L)
Orientation on the ultimate strength of linear high polymers, Effect of, C. C. Hsiao—1189(L)
Orientations, preferred, Analysis of certain errors in the x-ray reflection method for the quantitative determination of, Warren P. Chernock and Paul A. Beck—341
Oscillating cylinder viscometer, Theory of, Part I, Ali A. K. Ibrahim and A. M. Kabiel—754
Oscillating cylinder viscometer. I, Ali A. K. Ibrahim and A. M. Kabiel—1190(L)
Oscillators, Robert S. Elliott—812
Oxide cathodes, W. F. Leverton and W. G. Shepherd—787
Oxide-coated cathodes, Correlation of dc and microsecond pulsed emission, Frank A. Horak—346
Oxide-coated cathode by x-ray diffraction method, Study of, Eiso Yamaka—498(L)
Oxide-coated cathodes by x-ray diffraction method (I), Eiso Yamaka—937
Oxide-coated cathodes, Decay and recovery of the pulsed emission of, R. M. Matheson and L. S. Nergaard—869
Oxide replicas for electron microscopy, Structure of, Shigeto Yamaguchi—445
Oxygen-free single crystals of lead telluride, selenide, and sulfide, W. D. Lawson—495

Particle dynamics in the linear accelerator, J. R. Terrall and J. C. Slater—66
Pellets, ultra-speed, Phenomena associated with the flight of. Part I. Ballistics, William A. Allen, John S. Rinehart, and W. C. White—132
Pellets, ultra-speed, Phenomena associated with the flight of. Part II. Spectral character of luminosity, W. C. White, John S. Rinehart, and William A. Allen—198
Pellets, ultra-speed, Phenomena associated with the flight of. Part III. General features of luminosity, John S. Rinehart, William A. Allen, and W. C. White—297
Perminvar having a rectangular hysteresis loop, Domain structure of, H. J. Williams and Matilda Goertz—316
Phase changes in silver—tin amalgams, J. C. Moffett, G. Ryge, and A. G. Barkow—1188(L)
Phase equilibrium, S. S. Sidhu and J. C. McGuire—1257
Phenomena associated with the flight of ultra-speed pellets. Part I. Ballistics, William A. Allen, John S. Rinehart, and W. C. White—132
Phenomena associated with the flight of ultra-speed pellets. Part II. Spectral character of luminosity, W. C. White, John S. Rinehart, and William A. Allen—198
Phenomena associated with the flight of ultra-speed pellets. Part III. General features of luminosity, John S. Rinehart, William A. Allen, and W. C. White—297
Phosphors, scintillation, Effect of pressure on, A. J. Reinsch and H. G. Drickamer—152(L)
Phosphors, ultraviolet excited, Radiofrequency field quenching of, T. Miller and K. N. Fromm—373(L)
Physical processes in the *L* cathode, D. L. Schaefer and John E. White—669
Physical properties of active nitrogen, Measurements of, James M. Benson—757
Physical theory of rubber reinforcement, A. M. Bueche—154(L)
Piezoelectric crystals, Forced thickness-shear and flexural vibrations of, Raymond D. Mindlin—83
Planar diodes for relativistic velocities, Space charge and transit time considerations in, Henry F. Ivey—208
Plasma phenomena, Philip Parzen—215
Plastic flow, F. Schwarzl and A. J. Staverman—838
Point focusing x-ray monochromator for the study of low angle diffraction, Leon Shenfil, Warren E. Danielson, and Jesse W. M. DuMond—854
Point focusing x-ray monochromator, Latex particle size determination using diffraction peaks obtained with, Warren E. Danielson, Leon Shenfil, and Jesse W. M. DuMond—860
Polarization of acoustic waves in cubic crystals, A. E. Fein and Charles S. Smith—1212
Polycrystalline materials, Study of imperfections of crystal structure in: Low carbon alloy and silicon ferrite, J. J. Slade, Jr., and Sigmund Weissman—323
Polycrystalline nickel, Magnetically induced ultrasonic velocity changes in, S. J. Johnson and T. F. Rogers—574
Polycrystalline silver, pure, Self-diffusion in, L. Slifkin, D. Lazarus, and T. Tomizuka—1032
Polyethylene during γ-irradiation, Conductivity change in, S. Mayburg and W. L. Lawrence—1006
Polyethylene, Orientation of crystallites in stretched, Samuel Krimm—287(L)
Polygonization during diffusion, R. W. Balluffi—1407(L)
Polymers, dynamic properties of, A. W. Nolle and P. W. Sieck—888
Polystyrene latex particles, S. G. Ellis—728
Positive and negative corona in hydrogen and argon between coaxial cylindrical electrodes over an extended pressure range, Mechanisms of, Eugene J. Lauer—300
Potential distribution for space-charge limited current between a plane accelerating grid and parallel anode, E. G. Ramberg and L. Malter—1333
Potential theory, R. E. Collins—681
Precipitation mechanics, Vertical shaft for the production of thick artificial clouds and for the study of, Ross Gunn—1
Probability distribution of the phase of the resultant vector sum of a constant vector plus a Rayleigh distributed vector, Kenneth A. Norton, Edna L. Schultz, and Helen Yarbrough—137
Program of the Electron Microscope Society of America—156
Projectiles in free flight, Interferometric analysis of airflow, F. D. Bennett, W. C. Carter, and V. E. Bergdolt—453
Propagation of elastic waves in a cylindrical bore containing a fluid, M. A. Biot—997

Radiating slots, Harry Gruenberg—733
Radiation absorption, Temperature gradient owing to, G. B. Shook—931(L)
Radiation by an arbitrary planar configuration of parallel

cylinders and by two parallel cylinders, Multiple scattering of, Victor Twersky—407
Radiation characteristics of a turnstile antenna shielded by a section of a metallic tube closed at one end, Alfredo Baños, Jr., David S. Saxon, and Louis L. Bailin—688
Radiation damage in matter bombarded by light ions and a matter of making it uniform, Considerations regarding the distribution of, Philip Schwed and Gerhart Groetzinger—234
Radiation effects, Warren F. Witzig—1263
Radiation field of a square, helical beam antenna, H. Lottrup Knudsen—483
Radiation from a dielectric wave guide, Robert M. Whitmer—949
Radiation, nuclear, K. O. Otley and W. A. Weyl—499(L)
Radiation or diffraction patterns close to receiving antennas, L. S. Palmer—289(L)
Radiation pattern of an antenna over a circular ground screen, James E. Storer—588
Radiation, penetrating, Receiver of high effective absorption for, Rudolf Frerichs—697(L)
Radiation resistance of resonant transmission lines, R. A. Chipman, E. F. Carr, N. A. Hoy, and M. Yurko—613
Radio propagation, Kenneth A. Norton, Edna L. Schultz, and Helen Yarbrough—137
Radioactive isotopes in a study of evaporation from thermionic cathodes, Use of, W. F. Leverton and W. G. Shepherd—787
Radioactive material for the generation of high voltage, E. G. Linder and S. M. Christian—1213
Radiofrequency field quenching of ultraviolet excited phosphors, T. Miller and K. N. Fromm—373(L)
Radiofrequency field quenching of ultraviolet excited phosphors, Theodore Miller—1289
Random noise in dielectrics, Herbert Bauss and R. F. Boyer—802(L)
Reactor or pile theory, Gilbert N. Plass—621
Receiver of high effective absorption for penetrating radiation, Rudolf Frerichs—697(L)
Redundant information supplied in practical applications by the time and frequency-phase responses of a system, M. Levy—801(L)
Reflection of microwaves from metal-plate media, J. J. Brady, M. D. Pearson, and S. R. Peoples—964
Reliability of probe measurements in hot cathode gas diodes, Gottfried Wehner and Gustav Medicus—1035
Relation between the conductance and the noise power spectrum of certain electronic streams, J. J. Freeman—1223
Resonant behavior of a confocal spheroidal cavity system in the microwave region, Electromagnetic, J. C. Simons and J. C. Slater—29
Resonant cavities, Field strength measurements in, L. C. Maier, Jr., and J. C. Slater—68
Reversion method for solving nonlinear differential equations, Louis A. Pipes—202
Rocket motors, Steady-state one-dimensional flow in, E. W. Price—142
Rubber reinforcement, Physical theory of, A. M. Bueche—154(L)
Rubber-like elasticity, Statistical theory of. V. The stress birefringence, Akira Isihara, Natsuki Hashitsume, and Masao Tatibana—308

Scabbing of metals under explosive attack: multiple scabbing, John S. Rinehart—1229
Scattering by small obstacles, Experiments on centimeter-wavelength, N. R. Labrum—1320
Scattering of electromagnetic energy in a randomly inhomogeneous atmosphere, Harold Staras—1152
Scattering of radio waves by meteorological particles, N. R. Labrum—1324
Scattering theory, Multiple, of the finite grating and the wood anomalies, V. Twersky—1099
Schlieren study, F. K. Elder, Jr., and N. de Haas—1065
Schlieren study, Microchronometric, of gaseous expansion from an electric spark, H. L. Olsen, R. B. Edmonson, and E. L. Gayhart—1157
Scintillation phosphors, Effect of pressure on, A. J. Reinsch and H. G. Drickamer—152(L)
Seismology, Sushil Chandra Gas Gupta—1276(L)
Self-diffusion in graphite, Mechanism for, G. J. Dienes—1194
Self-diffusion in graphite using C-14 tracer, Studies of, M. H. Feldman, W. V. Goeddel, G. J. Dienes, and W. Gossen—1200
Self-diffusion in pure polycrystalline silver, L. Slifkin, D. Lazarus, and T. Tomizuka—1032
Self-diffusion of silver, Effect of impurities on, R. E. Hoffman and D. Turnbull—1409(L)
Self-heating thermionic vacuum tubes, E. G. Hopkins—1055(L)
Semiconductors, Eugene B. Hensley—1122
Semiconductors, J. R. Young—1129
Separation of stacking fault broadening in cold-worked metals, B. E. Warren and B. L. Averbach—1059(L)
Shadow of an electron beam, H. M. Smith and S. Hansen—1054(L)
Shock tube, cylindrical, Experimental study of the formation of a vortex ring at the open end of, F. K. Elder, Jr., and N. de Haas—1065
Shock tubes, Production of high temperature gases in, E. L. Resler, Shao-Chi Lin, and Arthur Kantrowitz—1390
Shock wave formation in a shock tube, George A. Lundquist—374(L)
Shock waves and rough surfaces, The interaction of plane, Russell E. Duff—1373
Silicon carbide contact, Contribution to the theory of, Else Holm—509
Silicon ferrite, Low carbon alloy, J. J. Slade, Jr., and Sigmund Weissmann—323
Silicon, purest, and germanium, Lattice parameters, coefficients of thermal expansion, and atomic weights of, M. E. Straumanis and E. Z. Aka—330
Single crystal surfaces, sodium chloride, Crack formation on, Robert A. Lad—800(L)
Single crystals, Au-Cd, containing 47.5 atomic percent cadmium, Lo-Ching Chang—725
Single crystals, iron, Note on the strain aging of, A. N. Holden and F. W. Kunz—799(L)
Single crystals, iron-silicon, Complicated domain patterns on, C. F. Ying, S. L. Levy, and R. Truell—1339
Single crystals, metal, Amplitude pulsations in the vibrational strain pattern of, J. W. Marx—1406(L)
Single crystals of beta-brass, Temperature dependence of Young's modulus and internal friction of, Robert A. Artman—475
Single crystals, oxygen-free, of lead telluride, selenite, and sulfide, W. D. Lawson—495
Single crystals, zinc, Creep of, L. Slifkin and W. Kauzmann—746
Single synthetic cadmium sulfide crystals, S. J. Czyzak, D. J. Craig, and C. E. McCain—932(L)
Solubility and diffusion coefficient of carbon in nickel: Reaction rates of nickel-carbon alloys with barium oxide, J. J. Lander, H. E. Kern, and A. L. Beach—1305
Space charge and transit time considerations in planar diodes for relativistic velocities, Henry F. Ivey—208
Space-charge distribution in a cut-off magnetron, Statistical approach to, Gunnar Hok—983

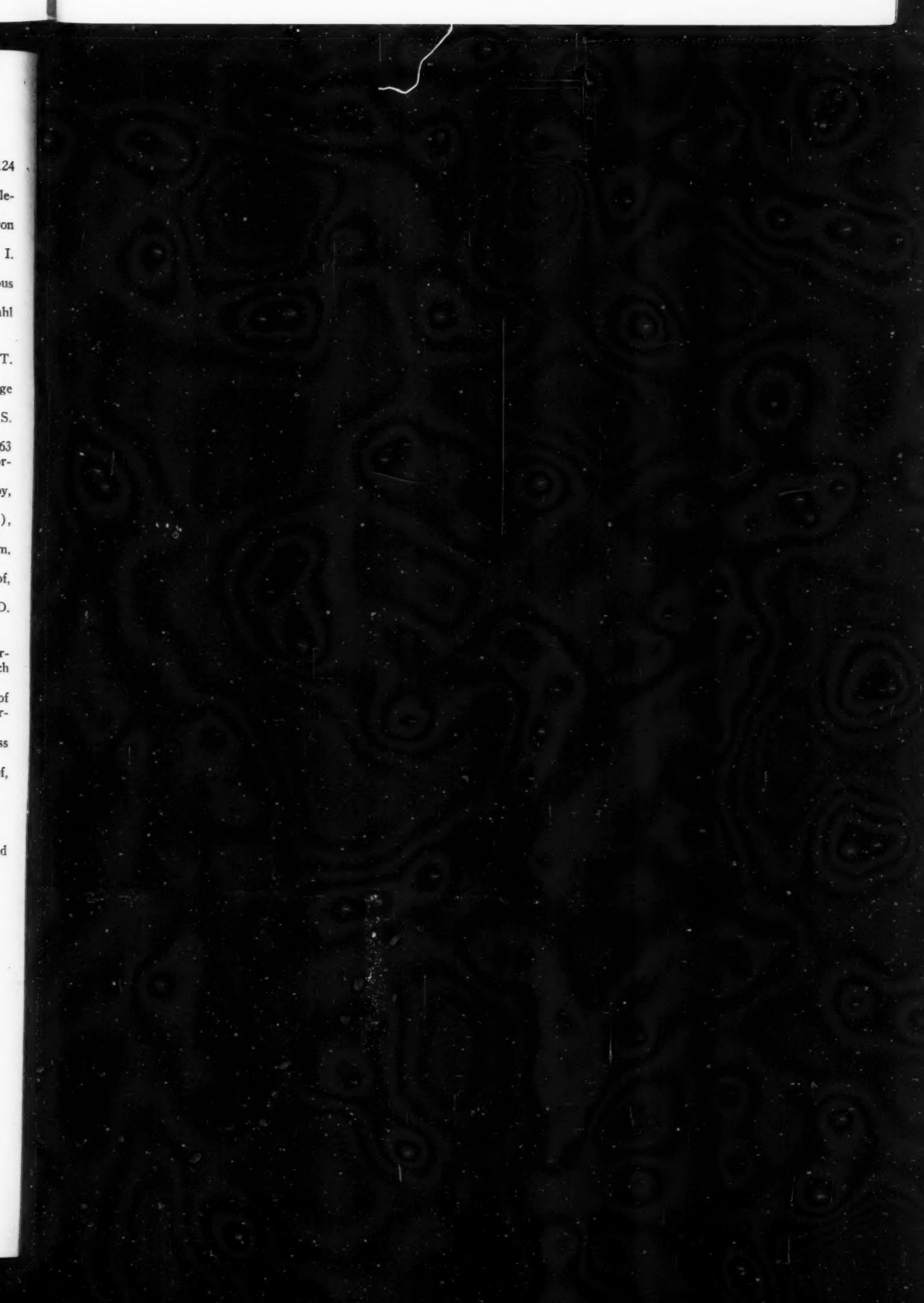
Space-charge limited current between a plane accelerating grid and parallel anode, Potential distribution for, E. G. Ramberg and L. Malter—1333
Space-charge-limited currents between inclined plane electrodes, Henry F. Ivey—240
Space charge or electron beams, Lawrence A. Harris—562
Space charge reduction of low frequency fluctuations in thermionic emitters, T. B. Tomlinson—894
Specimen charging in the electron microscope and some observations on the size of polystyrene latex particles, S. G. Ellis—728
Spectra, Instantaneous power, Chester H. Page—103
Spectral emissivity of iron-nickel alloys, H. B. Wahlin, Robert Zentner, and James Martin—107
Spectrometer, beta-ray, with tilted sources, C. M. Fowler and P. Domotor—415
Spherical aberration of an electrostatic electron lens, Method for measurement of, Daryl W. Shipley—1310
Spherical blast, Initial behavior of, J. A. McFadden—1269
Spheroidal cavity system, confocal, in the microwave region, Electromagnetic behavior of, J. C. Simons and J. C. Slater —29
Sputtered silver films, Structure of, C. E. Ells and G. D. Scott—31
Sputtering, Cathodic, for micro-diffusion studies, Thomas F. Fisher and C. E. Weber—181
Statistical approach to the space-charge distribution in a cut-off magnetron, Gunnar Hok—983
Statistical errors in measurements on random time functions, W. B. Davenport, Jr., R. A. Johnson, and D. Middleton —377
Statistical theory of rubber-like elasticity. V. The stress birefringence, Akira Isihara, Natsuki Hashitsume, and Masao Tatibana—308
Steady-state heat flow problem for a quarter infinite solid, William Karush—492
Stochastic processes, W. B. Davenport, Jr., R. A. Johnson, and D. Middleton—377
Stochastic processes, nonstationary, Theory of prediction of, R. C. Davis—1047
Strain energy, Benjamin Welber—876
Structure of oxide replicas for electron microscopy, Shigeto Yamaguchi—445
Structure of sputtered silver films, C. E. Ells and G. D. Scott —31
Structure of tetragonal tungsten trioxide, W. L. Kehl, R. G. Hay, and D. Wahl—212
Studies in Newtonian flow. IV. Viscosity *vs* molecular weight in liquids; viscosity *vs* concentration in polymer solutions, Arthur K. Doolittle—418
Supersaturation of nitrogen in a hypersonic wind tunnel, I. Faro, T. R. Small, and F. K. Hill—40
Supersonic flow, Russell E. Duff—1373

Temperature dependence of viscosity for water and mercury, Preston M. Kampmeyer—99
Temperature dependence of the viscosity of liquids, F. Gutmann and L. M. Simmons—977
Temperature dependence of Young's modulus and internal friction of single crystals of beta-brass, Robert A. Artman —475
Temperature gradient owing to radiation absorption, G. B. Shook—931(L)
Temperature gradient, Thermal force on an aerosol particle in, R. L. Saxton and W. E. Ranz—917
Theory of antenna beam shaping, Allen S. Dunbar—847
Theory of electrically short transmitting and receiving antennas, Ronold King—1174
Theory of impulse breakdown, Contribution to, Frank R. Dickey, Jr.—1336
Theory of jet formation by charges with lined conical cavities, Emerson M. Pugh, R. J. Eichelberger, and Norman Rostoker—532
Theory of prediction of nonstationary stochastic processes, R. C. Davis—1047
Thermal and shot fluctuations in electrical conductors and vacuum tubes, Salim S. Solomon—109
Thermal conductivity of metals at high temperature, C. L. Hogan and R. B. Sawyer—177
Thermal conductivity of metals at high temperature, C. L. Hogan and R. B. Sawyer—600 (erratum)
Thermal dependence of the elastic moduli of polycrystalline graphite, F. E. Faris, L. Green, Jr., and C. A. Smith—89
Thermal force on an aerosol particle in a temperature gradient, R. L. Saxton and W. E. Ranz—917
Thermal noise, Excess, due to current flow through Ba.Sr oxide coating, K. Amakasu—1330
Thermal neutron diffusion length in a heterogenous pile, Gilbert N. Plass—621
Thermal stresses in a partially clamped elastic half-plane, J. H. Huth—1234
Thermal-velocity spread on the noise figure in traveling-wave tubes, Effect of, Philip Parzen—394
Thermionic emission, Frank A. Horak—346
Thermionic emission, R. C. Hughes, P. P. Coppola, and H. T. Evans—635
Thermionic emission, Walter Grattidge and Harold John—1145
Thermionic emission, Ray C. Hughes and Patrick P. Coppola —1261
Thermionic emission and electrical conductivity of oxide-coated cathodes, Shin-ichiro Narita—599(L)
Thermionic emitters, Space charge reduction of low frequency fluctuations in, T. B. Tomlinson—894
Thermionic vacuum tubes, Self-heating, E. G. Hopkins—1055(L)
Thermodynamics, R. S. Jessup—543
Thick plate with circular hole, Flow over, W. R. Smythe —447
Three-dimensional electromagnetic problems, Reduction of, John W. Miles—372(L)
Thyratrons, ionization time of, James B. Woodford, Jr., and Everard M. Williams—722
Time-temperature dependence of linear viscoelastic behavior, F. Schwarzl and A. J. Staverman—838
Trajectories of charged particles in magnetic fields, Simulation of, George H. Vineyard—35
Transistors, filamentary, Large current amplifications in, W. van Roosbroeck—1411(L)
Transmission by gratings of resistive wires, Edward A. Lewis and Joseph P. Casey, Jr.—605
Transmission lines, resonant, Radiation resistance of, R. A. Chipman, E. F. Carr, N. A. Hoy, and M. Yurko—613
Transmission lines, Variational principles for problems in, Mikio Namiki and Hiroshi Takahashi—1056(L)
Transmission of x-rays at settings near the Bragg angle, G. N. Ramachandran—500(L)
Transverse permeabilities of large core samples from petroleum reservoirs, Determination of, R. E. Collins—681
Treatment of the viscosity of concentrated suspensions, Robert Simha—1020
Truncated hemisphere, Resistance of, W. R. Smythe—1280(L)
Tungsten trioxide, tetragonal, Structure of, W. L. Kehl, R. G. Hay, and D. Wahl—212
Turbulence, isotropic, Energy transference between wave numbers in, Hiroshi Sato—698(L)
Turbulent diffusion and erosion, Richard W. Davies—941

Uhf coupling networks, Edwin T. Jaynes—1077
Ultrasonic attenuation in solids by the pulse technique and some results in steel, Measurements of, R. L. Roderick and Rohn Truell—267
Ultrasonic velocity changes in polycrystalline nickel, Magnetically induced, S. J. Johnson and T. F. Rogers—574
Ultrasonic waves in polymers, A. W. Nolle and P. W. Sieck —888
Ultrasonic waves, Metallic corrosion influenced by, Shigeto Yamaguchi—1057(L)
Ultrasonics, Robert A. Mapleton—1346
Unsteady-state separation performance of cascades. I, Eliott W. Montroll and Gordon F. Newell—184

Vacuum tubes (diodes), Paul L. Copeland and D. N. Eggenberger—280
Vacuum tubes, Thermal and shot fluctuations in electrical conductors and, Salim S. Solomon—109
Variational principles for problems in transmission lines, Mikio Namiki and Hiroshi Takahashi—1056(L)
Velocity distribution in a modulated electron stream, Effect of, Dean A. Watkins—568
Vertical entry of missiles into water, Albert May—1362
Vertical shaft for the production of thick artificial clouds and for the study of precipitation mechanics, Ross Gunn—1
Viscoelastic deformation, Distribution of activation energies for, W. James Lyons—287(L)
Viscosity of concentrated suspensions, Treatment of, Robert Simha—1020
Viscosity for water and mercury, Temperature dependence of, Preston M. Kampmeyer—99
Viscosity of liquids, Temperature dependence of, F. Gutmann and L. M. Simmons—977
Viscous energy dissipated during the atomization of a liquid, G. W. Monk—288(L)

Water vapor in the microwave region, Dielectric constant of, George Birnbaum and S. K. Chatterjee—220
Wave-equation boundary-value problems, Direct-current network analyzer for solving, George W. Swenson, Jr., and Thomas J. Higgins—126
Wave equation in a region of rapidly varying complex refractive index, Method of solving the, J. J. Gibbons and R. L. Schrag—1139
Wave equation in hyperbolic space, Solutions to, John W. Miles—1400(L)
Wave-guide-fed slots, Integral in the theory of, Henry E. Fettis—1409(L)
Wave-guide-fed slots radiating into parallel-plate regions, Theory of, Harry Gruenberg—733
Wave-guide impedance, Edwin T. Jaynes—1077
Wave propagation, J. N. Goodier and R. E. D. Bishop—124
Wave propagation, W. A. Cumming—768
Wave propagation, Elastic, in solid media, Robert A. Mapleton—1346
Wave propagation, Space-charge, in a cylindrical electron beam of finite lateral extension, Philip Parzen—215
Wind tunnel, hypersonic, Supersaturation of nitrogen in, I. Faro, T. R. Small, and F. K. Hill—40
Wire loops, current-carrying, in a simple inhomogeneous region, James R. Wait—497(L)
WO_3, Transitions in, W. L. Kehl, R. G. Hay, and D. Wahl —212

X-ray absorption corrections for single crystals, Howard T. Evans, Jr.—663
X-ray beam near the Bragg angle, L. Carlton Brown, George L. Rogosa, and Guenter Schwarz—1054(L)
X-ray broadening, Effects of lattice imperfections on, M. S. Paterson—499(L)
X-ray diffraction, P. H. Miller, Jr., and B. R. Russell—1163
X-ray diffraction by face-centered cubic crystals with deformation faults, M. S. Paterson—805
X-ray diffraction method, Study of oxide-coated cathode by, Eiso Yamaka—498(L)
X-ray diffraction method, Oxide-coated cathodes by (I), Eiso Yamaka—937
X-ray diffraction study of the hafnium-hydrogen system, S. S. Sidhu and J. C. McGuire—1257
X-ray fluorescent analysis, Metallurgical applications of, P. K. Koh and Betty Caugherty—427
X-ray line broadening of plastically deformed marble, D. Rosenthal and M. Kaufman—600(L)
X-ray measurement of order in CuPt, C. B. Walker—118
X-ray patterns, Separation of cold-work distortion and particle size broadening, B. E. Warren and B. L. Averbach —497(L)
X-ray reflection method for the quantitative determination of preferred orientations, Analysis of certain errors in, Warren P. Chernock and Paul A. Beck—341
X-ray scattering, Approximate elastic spectrum of β-brass from, H. Cole and B. E. Warren—335
X-rays at settings near the Bragg angle, Transmission of, G. N. Ramachandran—500(L)

Zinc, Anelasticity of, Shuichiro Takahashi—866
Zinc single crystals, L. Slifkin and W. Kauzmann—746
Zircon, Alpha-radiation damage in, Patrick M. Hurley and Harold W. Fairbairn—1408(L)